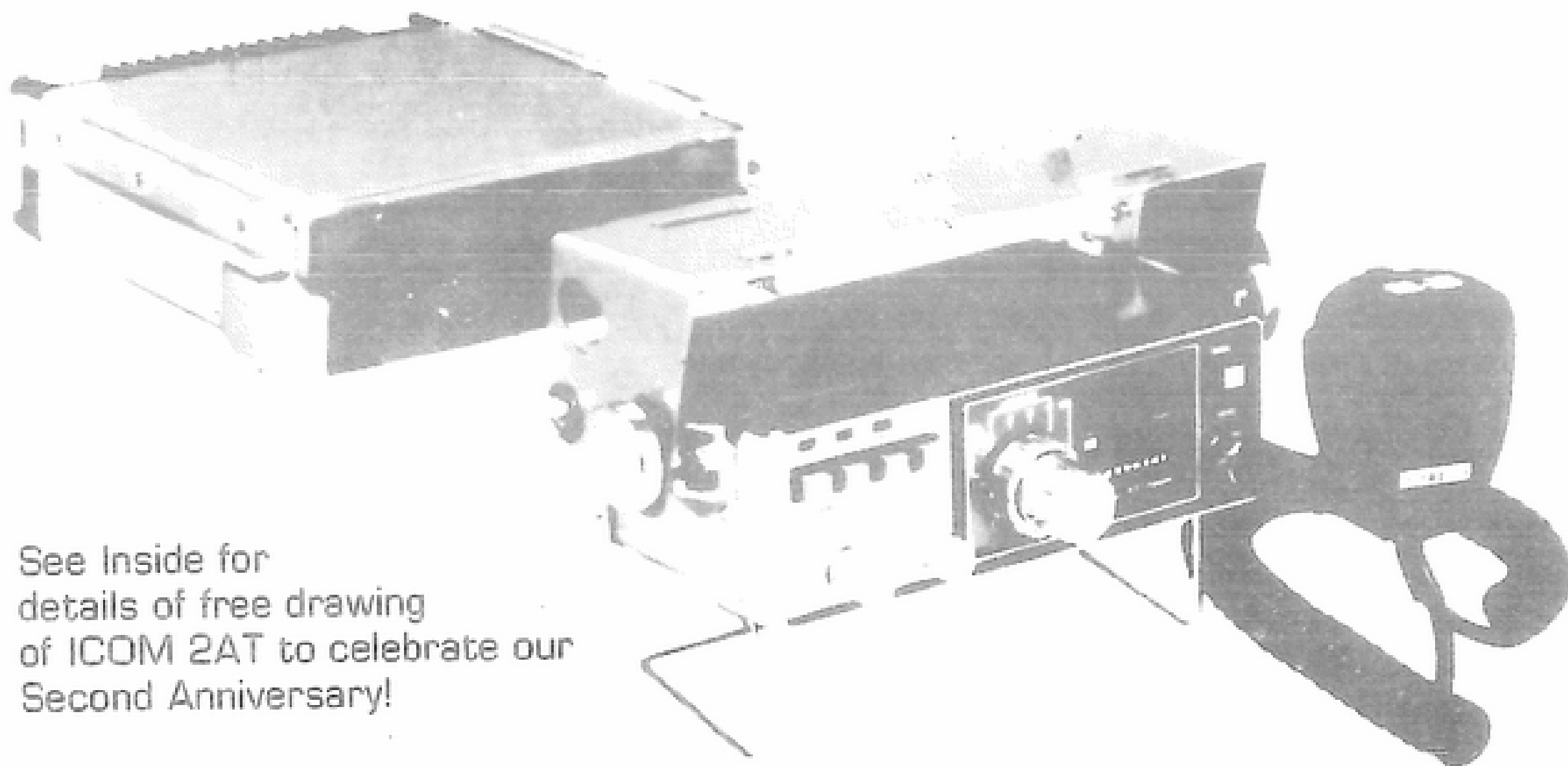


Postmaster, see page 3.

YOUR COMPLETE AMATEUR RADIO STORE

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See Inside for
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of ICOM 2AT to celebrate our
Second Anniversary!

NEW! FT-720R *from YAESU!* FM TRANSCEIVER FOR VHF OR UHF

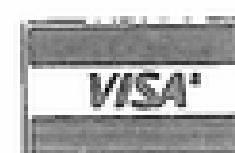
- Choose either 2 meter or 70 cm (440 MHz) RF deck .
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Central Oklahoma Radio Amateurs

COLLECTOR AND EMITTER



CORA Collector & Emitter (USPS 116-150) is published monthly for \$6 per year by CORA, Inc., 1020 Arthur Dr., Midwest City OK 73110. Second Class postage paid at Oklahoma City OK. POSTMASTER: Send address changes to: CORA C&E, P.O. Box 15013, Oklahoma City OK 73155.

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Circulation Mgr: Bob Graham WB5NSV 677-8685

Central Oklahoma Radio Amateurs, Inc. (CORA) is a not-for profit association of radio amateurs, founded for the promotion of interest in amateur radio communication and experimentation, for the advancement of the radio art and of the public welfare and operates to enhance the cooperation of member clubs in sponsoring activities of mutual interest to the clubs and all radio amateurs.

President	Chuck Wilhite	K5NK	721-4926
Vice President	Bob Graham	WB5NSV	677-8685
Secretary	Kay Northcutt	WD5DYJ	842-1086
Treasurer	George Maschino	K5GGL	263-7626

CLUBS PARTICIPATING IN CORA

1 AERONAUTICAL CENTER ARC MEETS: 8:00 PM First Friday each month Flight Standards Bldg. FAA Aero Center Pr WA5CJG Bob Pace 376-3569 VP K5KDR Bill Oliver 329-6333 Se WB5HSV Bob Graham 677-8685 Tr WB5AAY Larry Bugg 789-4180 Ed WB5NSV Bob Graham 677-8685	2 OKLAHOMA CENTRAL VHF CLUB MEETS: 8:00 PM Third Friday each month American Red Cross, 10th & Hudson OKC Pr K5VRL Jim Williams 789-0769 VP K5YAO Clarence Sittel 947-4015 Se K5JB Joe Buswell 732-0676 Tr W5KE Eillard Foster 789-6702 Ed K5JB Joe Buswell 732-0676	3 MID-OKLAHOMA REPEATER, Inc. MEETS: 8:00 PM First Tuesday of month Okla City EOC, 4600 N Eastern Pr KASCM Fred Taylor 526-1537 VP WB6PM3 Bob White 681-3222 Se W5DEQ Jim Buswell 236-0340 Tr K5PER Jim Jones 634-5235 Ed Dues: Sid Gerber, 829 Bouse HMC 73110
4 OKLA CITY AUTOPATCH ASSOCIATION MEETS: 7:30 PM 3rd Tuesday of month Okla Military Academy, 36th & Grand Pr K5NK Chuck Wilhite 721-4926 VP W5IH Henry Isreal 722-3848 Se WD5KFT Clara Storm 496-6228 Tr WB5QPI Zach Zachry 732-2088 Ed Henry Isreal	5 OKLAHOMA UNIVERSITY ARC MEETS: 8:00 PM (Sep-May) 2nd Tuesday Room 499, Career Engineering Center Pr KASDH James Gardner 321-8779 VP WB5QLF Alan Womser 325-2194 Se KASCOI Peter Richeson 325-3015 DUES: KB5BF Nathan Kirby 364-7979 Ed KB5BF Nathan Kirby 364-7979	6 ALTUS AREA AMATEUR RADIO ASSOC. MEETS: 7:30 PM 2nd Thursday each month North Main Fire Station (CD) Altus Pr WA5CBF Loren Simms 477-0921 VP S/T W5VXU Mike Schenkke 482-1797 Ed W5VXU Mike Schenkke 482-1797
7 BICENTENIAL ARC (THE 76'ERS) MEETS: 7:00 PM 2nd Tuesday each month Air National Guard, Hill Rogers Apt. Pr WD5BMP Joe Couch (Guthrie) 282-4353 VP WD5DYJ Kay Northcutt 842-1086 Se W5DEQ Jim Buswell 236-0340 Tr W5PE Tom Cassidy 751-1194 Ed KASFD Susie Atkinson	9 HEATSTRAM AMATEUR RADIO CLUB MEETS: 2:30 PM First Sunday of month Location Varies. See club section Pr WB5JNT Ted Vanlangham 262-1675 VP AB5Z Ray Barnes S/T W5PFR Ralph Wilder 623-5421 Ed WB5HTH Virginia Beneda 825-3302	10 CHOCTAW AMATEUR RADIO CLUB MEETS: 7:00 PM 2nd Monday. Choctaw City Hall. Pr AB5H Frank Carter 391-3394 VP WD5EVP Bob Allen Se W5ARV June Allen Tr KASALO R. G. Edwards 390-8297 Ed W5ARV June Allen
11 EDMOND AMATEUR RADIO SOCIETY MEETS: 2:00 PM 3rd Sunday. Room 205 Science Bldg. Central State Univ. Pr WD5HXK Ken Stepp VP KB5RR Clarence Dollmeyer S/T W5ERY Allen Watson Ad WD5FHR Dee Mize Ed KB5RR Clarence Dollmeyer	12 SHAMNEE AMATEUR RADIO CLUB MEETS: 8:00 PM 2nd & 4th Tuesday Shamnee City Hall - EOC Pr WB5OHL John Owens 273-0848 VP WD5FUG Les Stewart 567-3895 S/T WB5TZQ Bill Warren 275-0119 Ed WD5BUQ Jay Tingler 273-3033	13 KAY COUNTY AMATEUR RADIO CLUB MEETS: 7:30 PM 3rd Thursday of month Security Bank Basement, Ponca City Pr WB6NBK Steve Scott 765-7408 VP WB5SAG Grady Skillern 765-3411 S/T Cosby Clarke 765-3105 Ed Steve Scott
14 AMATEUR TV EXPERIMENTAL SOCIETY MEETS: 7:30 PM 2nd Thursday each month Central State Univ. Edmond Pr W5JGC James Buchanan 495-2777 VP W5HTL Paul Asplin (Bus) 521-2861 S/T W5ANG Mike Woods 528-3699 Ed W5JGC James Buchanan 495-2777	15 SOUTH CANADIAN AMATEUR RADIO SOCIETY MEETS: 9:30 AM 3rd Saturday each month Red Cross Bldg. North Campus Norman Pr KB5OK Laverne Hoag 329-7625 VP W5ABC John Stehr 364-8761 Se KASFBG Linda Brandt 321-5081 Ed WB5TZZ Jack Bickham 329-1311	16 EDMOND AMATEUR RADIO CLUB MEETS: 7:45 PM First Monday of month General Electric, 3228 N Santa Fe OKC Pr K5GBF Harold Plunk VP WA5BQX Bob Shaw S/T WB5UIY Stan Van Nort Ed WB5UIY Stan Van Nort
17 TRI-CITY AMATEUR RADIO CLUB MEETS: 7:30 PM First Monday of month. Location varies, see club section. Pr WB5TFX Ben Gard 379-3112 VP WB5VPM Carl Cash 257-2243 S/T KASFD Nancy Hayden 379-6448 Ed KASFD Nancy Hayden 379-6448	18 GREAT PLAINS AMATEUR RADIO CLUB MEETS: 7:30 PM 1st Tuesday each month Woodward Court House basement. Pr WB5OVT Rod Ford VP WD5DFH Bill Reid Se WD5DFG Donna Reid Tr KASFKV Gerald Bowman Ed W4ZSL Wes Duer	19 SOUTHEAST OKLA AMATEUR RADIO ASSN. Pr WB5TTV Ron Henson 326-5418 VP WB5ULI George Weldon 326-5672 S/T WD5FUE Orville Kaley 326-3640



Red Cross. The Good Neighbor.

DECEMBER MEETING - CHRISTMAS PARTY!

Not knowing what our beloved VP has written up for the C&E concerning our December Christmas party, this could be repetition. At any rate, our regular monthly meeting will be our Christmas party. It will be held at the Heritage House Smorgasbord, located at 3900 Northwest 63rd. We will be served promptly at 7:00 p.m. We have signed a Banquet Confirmation with the Heritage House, and they are very strict on this agreement. We must have a minimum of 25 persons in order to be guaranteed a private room. A final count of guests must be given to them three days prior to banquet date. At least 90% of the final count must be paid for. So, to prevent anyone or the club from being out any money, we must ask that if you plan to attend this year's party, we have your reservation ahead of time, along with your funds. The cost for each individual will be \$6.81, which includes all you can eat, your gratuity and tax. So, if you plan to attend, be sure and send in the reservation form below to: Clara Storm, WD5KFT, 6718 N.W. 30th Terrace, Bethany, Okla., 73008. Clara's home phone number is 495-6228. Be sure and enclose the appropriate funds with your reservation.

As we did last year, everyone is to bring a wrapped White Elephant gift to the party. Everyone enjoyed this last year and it should be a lot of fun again.

So, don't forget. The dinner will be held on December 16, and we must inform them as to the number of guests we expect no later than Saturday, December 13. They will be prepared to fix for a very limited number over our estimate we turn into them, but they say very few. So, don't be one of the number that might be left out.

Please make reservations for me, _____,
and _____ guests for the Oklahoma City Autopatch Association Christmas Party to
be held on Tuesday, December 16, 1980, 7:00 p.m., at Heritage House Smorgasbord.
Enclosed are the appropriate funds. \$6.81 x _____ = \$._____.

Mail to: Clara Storm, WD5KFT
6718 N. W. 30th Terrace
Bethany, Okla. 73008

I understand this must reach Clara before December 13, 1980.

I HEARD: FKG wants more of the I HEARD column.....NWX signed off because
TKG was the only one left on frequency.....5E is wondering when someone
is going to turn the sun off.....AQY is now attending a special spelling
school.....DDE is out jamming radar.....KFT is now in big time
oil business.....BWW will no longer feel guilty when eating peanuts.....
1S has something special in his heart about gals in western outfits.....SW
is a mooch.....CZN has been figuring the net worth of his spouse (XYL)
in order to justify his new six meter radio.....FKF isn't sure if he is
FKF or FXP.....IH is well informed about canine ancestry.....SW
doesn't have the guts to put up his new tower.....NZS informed his wife
that he was a ham a long time before he married her.....M falsely accusing
NK of key clicks.....FXP is attending church regularly now that his wife
pointed out all his shortcomings.....GL's favorite hobby is now and then
eyeballing pretty young things.....FXP's fist with a hand key leaves some-
thing to be desired.....SLA has gone straight.....GE uses a
different formula than the old 1 to 10 to describe pretty gals - he does this to
fool his wife who might be listening on the scanner.....JL doesn't think
much of IH's new antenna farm.....NK will have a New Year's resolution
column in the January issue of C&E.....GKK has a leaky water pump just
like TKG.....and a whole lot more. K5NK



Well, well, well; Here it is the end of November, not even Thanksgiving yet at the time of this writing, and already we have had 4 inches of snow, and the HF bands have opened up to every part of the world at hours of the day when most think the bands are dead. I have heard, and also worked myself, into Europe as early as 6:00 A.M. on TEN meters. This feat is really nothing though as everyone at the last Auto-Patch meeting will attest. The film that Frank (N5FM) was able to show for us takes the cake for at least this year. For those who were not one of the fifty or so people in attendance at the November meeting it was surely your loss. A great big thanks to Frank and also to John (K5YGM) for the film and the editing. T*H*A*N*K*S

*****WE WANT YOU*****

And maybe you want us too. There are a great number of reasons why you might want to become involved in the auto-patch assn., but one is enough so you might think about which one is your reason for joining. We run the only six meter repeater in the area with extremely good coverage, we also run two of the finest two meter repeaters in town with about the best coverage anywhere, and we also run a very good, if not the best, 450 repeater in town, maybe in these parts. So if your bag is rag chew, we have you covered; if it is being able to make a phone call when you like without waiting, we have you taken care of; if you like long distance repeater usage we also have you covered there too; So, pick one of these reasons, wait for another, or use on of your own, but please check out becoming a member of the Oklahoma City Auto-Patch Assn. NOW!!!!

*****INSURANCE*****

This could be another reason for joining the auto-patch assn., but for those that are members I would like to take this opportunity to remind you of the insurance program that the Oklahoma City Auto-Patch Assn. offers to its members. I have enclosed a copy, on the following page, of one of the certificate of insurance from this plan. If you will spend a moment to go over the coverage and the price you will see that there is no other plan that is available that can compete with what our Assn. offers to it's members. Take a minute and really look it over, if you do not already have it. By the way it is written both annually and semi-annually so now IS a good time to get in.

FOR SALE- Yeasu FT207R fully synthesized handi talkie, with battery pack wall charger, etc. please call Wendall Shipley KA5EBA 843-3925 Priced Right!!!!

FOR SALE - TS-820 D, SM 220 scope, and R-820 receiver. TS-820 has 500 Hz CW filter, new finals, and is ready to work transceive with the R-820 receiver. All cables, probes, and etc. are enclused. Will sell all together or will split up as you like. But, if you want the ultimate in HF equipment this is it. Any reasonable offer will be considered. Contact Henry (N5IH) 722-3848 or 843-1721.

DO YOU NEED?? Do you need a 2 meter talkie? It is said that Guy (K5GL) has one of every make so if you need one give him a call.



CERTIFICATE OF INSURANCE

This is to Certify that the Fireman's Fund Insurance Company of Texas issued to the Oklahoma City Auto Patch Corp., Policy Number _____, Dated March 1, 1980, and effective for one year from this date.

COVERAGE

Scheduled Articles Floater, (Broad Form)

This Certificate makes a part of the stated policy and gives the named Certificate holder Blanket Coverage in the amount of \$2,000.00 for the following described articles:

Transmitting and Receiving Equipment, Antennas, and All Necessary Accessories for the use thereof. This includes Portable, Fixed- Base, and Equipment in Vehicles.

For the additional premium stated below, this policy will include an additional AMOUNT added to the basic in the amount of \$ _____. This additional AMOUNT is added at the rate of \$1.50 per \$100.00 of value. There MUST BE A PREMIUM CHARGED FOR THERE TO BE ANY ADDITIONAL AMOUNT OF COVERAGE.

PERILS INSURED

THIS POLICY INSURES AGAINST ALL RISK OF DIRECT PHYSICAL LOSS OF OR DAMAGE TO THE PROPERTY INSURED FROM ANY EXTERNAL CAUSE (except as otherwise provided).

PERILS EXCLUDED

The Principal Exclusions Are:

- Wear and Tear and Extremes of Temperature
- Loss or Damage Caused by or Resulting From Delay or Loss of Use.
- Dishonesty on the Part of the Insured or other party at interest.
- Unexplained Loss, Mysterious Disappearance or Shortage at Inventory.
- Direct Damage from Rain, Snow, or Sleet Wind Driven or Not, However, Water Damage Shall be Covered Otherwise.
- Loss From Unattended Vehicle, Unless there is Evidence of Forceable Entry.

DEDUCTIBLE CLAUSE

In the Event of Loss or Damage, a \$50. deductible shall apply to either the Limit of Liability or the adjusted loss whichever is less.

COINSURANCE

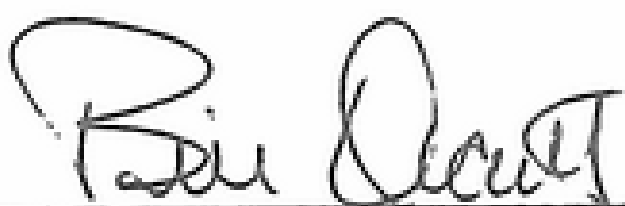
The Company shall be liable for no greater proportion of any loss than the amount hereby insured bears to one hundred percent (100%) of the actual cash value of the property described herein at the time when such loss shall happen. If this policy covers two or more items, this clause shall apply to each item separately.

THIS CERTIFICATE IS MERELY EVIDENCE OF THE ISSUANCE OF SAID POLICY AND IS GIVEN AS A MATTER OF INFORMATION. THIS DOES NOT CONTAIN ALL THE TERMS, CONDITIONS OR THE EXCLUSIONS OF THE POLICY AND FOR MORE INFORMATION REFER TO THE POLICY.

CERTIFICATE ISSUED TO: Henry D. Israel BASIC PREMIUM \$30.00
10301 Basswood Canyon Rd. ADDITIONAL PREMIUM _____
Okla City, Okla 73132 TOTAL PREMIUM _____

EFFECTIVE DATE OF CERTIFICATE 3/1/80

CERTIFICATE NO. 01018


WHITTINGTON INSURANCE AGENCY, INC.
AUTHORIZED REPRESENTATIVE



INSURANCE - After just looking over the copy of the certificate of insurance if you have any questions on how to become covered or any question of a general nature please give me (N5IH) a call. I'll do the best I can.

Meeting Place - As most know the November meeting was not held in the normal place. We Chuck (K5NK) would very much like to hear your comments on the new place. Do you like it, do you not like it etc.? Please let Chuck hear from you so we will know what YOU want us to do. If at all possible please contact Chuck by letter!!!

Machines - At the time of this writing all machines are working well. 81-21 just went back on the air after being re-tubed and the squelch tail shortened on both two meter machines. This does not mean to Ker-Chunk a bunch to see if the repeater is up. There is no need to do this. Why not call the station you want to instead, and if you were not going to call anyone then keep your cottonpicken fingers off the push to talk!!!! Short squelch tails are convenient.

DX- There is more and more good contact information being passed on the OKDX freq. at this time the 600, and the 5R are drawing the most attention, however the JX is back and has been already worked by some locals. Others to look for in the very near future are; PA0GMM at ZM7, and maybe VK2BKD on Kingman, mellish, and Kermadec. There are lots of other good ones showing up all the time so be sure and tune into 146.000 and ask WHATS ON???? By the way there is only a couple of stations that continue to cause interference on the OKDX freq. If these users of some of the two meter machines would take just a little pride in their equipment and check to see if they are running too much deviation(all Japanese rigs do) and if they are cut them back to five Khz we could all live together in the space given us. Please don't interfere with others.

SEE YOU ON 146.000

FOR SALE--Fall and winter is here and with it comes the DX season on 40 meters. It is open every day to Europe, Asia, and South Pacific. I have one Swan MB-40 H. Two element 40 meter beam. Will show you how good 40 really is. Call Henry 722-3848.

Wanted: Two items 1. PHONE PATCH. 2. POWER SUPPLY FOR TR-22 2 meter transceiver. 13 volts DC + or - 1.5%, 450 mA on transmit. Call Cleo, WA5SUD, 942-2928

<p>EXTRA CLASS AMATEUR RADIO W5KE</p> <p>FIRST CLASS RADIOTELEPHONE LICENSE</p> <p>ELLARD'S EX EL ELLARD W. FOSTER, OWNER 5905 N.W. 42nd Street, Phone: 405/789-6702 OKLAHOMA CITY, OKLA. 73122</p> <p>TELETYPEWRITER ASSEMBLIES</p> <p>USED TEST EQUIPMENT</p> <p>EXCESS ELECTRONICS</p>	<p>Tektronix COMMITTED TO EXCELLENCE</p> <p>MIKE RILEY Sales Engineer Measurement Products</p> <p>Tektronix, Inc. 800 N.E. 63, Suite 201 Oklahoma City, Oklahoma 73105 Phone: 405-848-3361 or 800-522-8198 (Okla. WATS)</p> 
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MID-OKLAHOMA REPEATER, INC.



MORI CHRISTMAS PARTY

Dodson's Cafeteria 4101 S WESTERN
6:30 Y'ALL COME 3 DEC 80

NOTES.....

One session of the MORI Scout-O-Rama has been successful. Several lost kids re-united with parents, and no serious accidents reported. J. R.'s demise on "Dallas" was reported through our net with WA5TAR as net control. Net members were KA5JZQ Lee, W5DDI George, N5AZO John, WB5PWZ Bob, KA5CXW Fred and KA5FED Susie logging it all in. Thanks to all. We still have two more sessions, Saturday afternoon with Ben and Pat, WB5TFX and WB5TFY as Net Control and the evening session with George W5DDI as Net Control.

The Christmas Party is set for Wednesday, December 3, 1980 at the Dodson's Cafeteria with a good program to be announced. Address for the cafeteria is 4101 S. Western. Time is 6:30 P. M. Bring the family. It will be fun. See ya there...

Fred KA5CXW

FOR SALE: ESTATE OF WD5FVD IVAN MCCREARY (Silent Key)
Contact Theresa McCreary. HeathKit HW2036 Mobile 2 meter, 40 ft. tower, Kenwood 700 SP (Mint), Henry amplifier (FM) 1 to 30, tower RONN 45, Swan tri-band beam, KLM 14 element beam, Optoelectronics counter, HeathKit P2715 Battery eliminator, RS 5 volt power supply, Heath IM1210 Multimeter, Heath IG4505 Oscilloscope, Heath oscilloscope calibrator (IG4505), Coax RG8U (with tower) Heath IM1210 multimeter and other miscellaneous items too numerous to mention.
Call: 732-9635.

HW 2036A with LED readout and matching AC Power supply and encoder mike, \$200.00 complete. Todd, 685-3685

CORRECTIONS TO CLUB OFFICERS ON PAGE 3

OU ARC, New Vice President, Secretary/Treasurer is Peter Richeson, KA5COI, phone 325-3015

SCARS: Pres, Wade Anderson, KB5EK, 794-5144, Vice Pres, Charles Warner, KA5GFL, 364-9561, Treasurer, H.O. Townsend, WA5MLT, 329-4426, Secretary, Sam Barrett, WA5RPP, 321-6297.

76'ers - President Bill Skipper, KB5BS, Vice president, Jerry Sproul, N5AUH, 354--2061, secret-ary, Jim Buswell, N5BEQ, 236-0368, Treasurer, Joe Couch, WD5BMP, (Guthrie) 282-4353.

CLUB EDITORS, PRESIDENTS, ETC.

IN ORDER TO GIVE EVERYONE EXTRA TIME FOR CHRISTMAS THE NEXT ISSUE OF C&E WILL BE PUT TOGETHER ON SATURDAY DECEMBER 13 AND MAILED ON DECEMBER 20. BY AUTOPATCH CLUB.

FOR A CHANGE LET'S TRY TO HAVE A PAGE FROM EVERY CORA AFFILIATED CLUB, EVEN IF IT IS A HAND DRAWN CHRISTMAS GREETING, THE REGULAR CONTRIBUTORS ARE ASKED TO KEEP THEIR COPY TO A PAGE OR TWO.

CHECK YOUR CLUB LISTING ON PAGE 3 AND IF ANYTHING WRONG LET ME KNOW AS SOON AS POSSIBLE SO IT CAN BE UPDATED.

JOE, WA5ZNF



MINUTES

The November meeting was called to order by Prez Fred KA5CXW at 8:05 pm on the 4th at the E.O.C. with 38 members and guests representing 309 club members.

The minutes were approved as published in the November Collector and Emitter (C&E).

The Treasurer's report was approved as presented.

On motion of Major KA5DMX and second by Max KA5IDQ the club agreed to purchase of a new replacement autopatch for the .67 repeater.

On motion of CY WB5TKG and second by Bob N5CKH much discussion followed concerning the club's involvement or not with Healthfair '81 next April. Motion to Table until acquiring more information passed by voice vote. The CORA representatives will report at the next meeting the results of the November CORA meeting with the coordinators of Healthfair'81.

The Club meeting paused from 8:40 to 9:09 pm for goodies.

Much discussion followed the break as a result of a member's suggestion that one of the club's repeaters be designated as a "calling" machine rather than be tied up with 'ragchewing' conversations. The consensus of those present was that the club's repeaters would not be further limited than they are, to wit: .67 holds the Oklahoma Nite Owl Net nitely at 10:30 pm throughout the year with .94 as back-up; .67 serves as back-up for the Central Oklahoma Severe Weather Warning Net normally held when needed on .82; .94 serves as Health and Welfare link to the American Red Cross in the event of a disaster. It was agreed there would be no further constraints.

Ken K5VVZ presented a brief program about the .67 site to correct misconceptions in the amateur population: the .07 receiver and its antenna are on the 800-foot level of TV Channel 4's tower in Northeast Oklahoma County, the transmitter and its antenna are on the platform at the 600-foot level with control circuits and autopatch in a metal portable building on the ground at the base of the tower. The transmitter output is approximately 60 watts with an E.R.P. at the legal limit. The antennae are mounted on the Southeast legs of the tower's 10-foot face yielding a slight shadow to the northwest.

The following received door prizes:

N5AKL Freddie	K5VVZ Ken	KA5CXW Fred	KA5DMX Major	WD5EVP Bob
Dot Hall	W5KOZ Sid	WD5GVJ Bruce	KA5IDQ Max	WB5TKG CY
WB5PWZ Bob	KA5ERW Carl	KA5FED Susie	K5HQP Marvin	WA5HTL Paul
K5VRL Jim	N5ARV June	Jim Harris	WA5TAR Sid	WA5ZNW Ross
WD5BNT Phil	K5NK Chuck	K5HFN Fred	WD5KPT Clara	N5CKH Bob
	Rosemary Eason		WB5TDW Joe	

The Christmas Committee announced that the site for the Dec. Dinner Meeting would be Dotson's Cafeteria, 4101 S. Western, OKC. The time will be from 6:30 to 9 pm but the date will be WEDNESDAY 3 Dec. rather than the regular meeting nite of Tuesday.

So, Remember, next meeting, WEDNESDAY, 3 December, 6:30 Dotson's Cafeteria, 4101 S. Western, bring a white-elephant gift, CU.

The meeting adjourned for the aftermeeting at 10:11 pm.

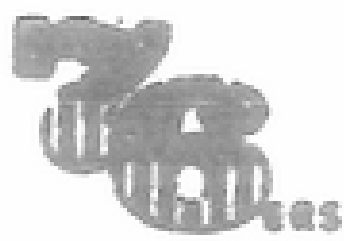
Jim N5BEQ
Secretary

For Sale : XTALS (call me), power supply \$30, TR-22 \$100 Jim n5beq.

For Sale : Spalding 48' tower \$200 Harry WD5IDE

AGE SAGE: HOW TO KNOW WHEN YOU'RE GROWING OLDER or IS THERE REALLY LIFE AFTER 40 ? : YOU GET YOUR EXERCISE ACTING AS PAILBEARER FOR YOUR FRIENDS WHO EXERCISE. jlm n5beq

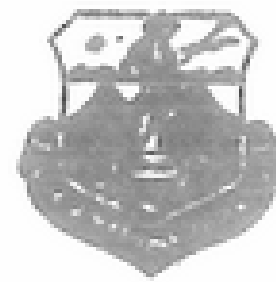
the magazine over, but good! Now, remember, the MORI Christmas Dinner/MEETING WILL BE WEDNESDAY, 3 DECEMBER, not Tuesday, at DOTSON'S CAFETERIA, 4101 S. WESTERN IN OKLAHOMA CITY, 6:30 pm. bring a white-elephant gift if you desire.



INCENTIVATIONAL AMATEUR RADIO CLUB

"To Promote Radio Communications"

Sponsored by Oklahoma Air National Guard
AORL, affiliated



"X" RATED ANTENNAS

Fortunately the X in this case is the one is DX rather than the one in sex. Some time ago I made the discovery that a 4 element quad was not the most maintenance free antenna for our climate here in Oklahoma. In my search for a suitable substitute, I noticed a rather strange looking antenna that according to the specs was very much the equivalent, in most respects, to the cubical quad. Important features that I just had to have were: 1. It had to be broad banded, because I work a good deal of cw as well as ssb and I have an all solid state transceiver which will not tolerate excessive swr. 2. It had to be able to take Oklahoma winds and ice. 3. It had to have good gain. Amazingly enough I found such an antenna at my local amateur radio store (Kryder). Before I knew it, I was the proud owner of a new KT-34A. I was not taken back in the least by KLM's statement, that some antenna experience was required to put it together. After all an old quad rebuilder can handle anything. Ne'er the less I soon realized that the assembly was no two hour project(not a piece of cake). Two days later after careful study of the instructions and several disassembling, reassembling sessions, I had the rascal together and on the air. It is definitely not a beginners project!

At first check, I knew I had troubles. The swr was higher than it should have been on all bands. I soon found that it was useable on the voice but not the cw segment of each band. Down the antenna came. I checked each dimension carefully, made a few adjustments and put it back up --- No change. Back down she came. I had obviously put something together wrong. I completely disassembled the antenna and very carefully reassembled it. No change! I tried breaking a few pileups with it and to my surprise, it really performed. I could load the antenna with the linear amplifier, but still could not run barefoot. Chuck (at Kryders) got me in touch with Mel at KLM. Mel was a lot of help. He gave me all the fixes that they had come up with for this problem. Unfortunately, as I tried each one of them, I found that none of them worked. I hinted that perhaps no one a KLM worked cw and got a rather sharp reply, to the contrary. I learned that Mel was one of the co-owners of KLM and into all facets of Amateur radio.

In an attempt to make an excessively long and wordy story shorter, I will simply say that Mel and I spent quite a bit of time on the phone the next weeks until we worked out a solution to the problem. (Anyone having problems with their KT-34A can give me a ring and I will be glad to share the details)

I was so pleased with the antenna and its performance that I ordered the extension kit which converted it from a KT-34A to a KT-34XA. When the conversion was complete and the antenna had been checked, I sealed everthing up with G.E. Silicon Seal and have not touched it since.

How did it perform? This is always difficult to evaluate with dealing with antennas because so many other things come into play. Even so, I am very much impressed with the antenna and feel that it has performed every bit as well as the four element quad and has been absolutely maintenance free. The most impressive characteristic that it has is an uncanny ability to break pile-ups. The number of first time called replies has increased considerably. I managed to work the Glorioso and Juan de Nova DXpeditions in the first few minutes of their operation.



The construction of the antenna is the most likely reason for its punch. There are no lossy traps like you find in most tri-band Yagis. The unique construction consists of a combination of linear loading and decoupling on each element. This cuts the overall length of each element down to that of a monoband fifteen meter element, rather than the length of a twenty element. This shorter length and trapless elements reduce the wind loading considerably. The boom on the "X" is thirty-two feet long (four - eight ft sections) and three inches in diameter, but it takes the wind better than any normal size three element tri-bander that I have had.

To sum things up, the KT-34XA is one fine antenna. I've worked some new countries. Broke a lot of pile-ups. And worked a few contests barefoot. When I had problems, the service from my local dealer and KLM was outstanding, including replacement parts at no cost to me and many telephone sessions helping me to find the problems. Besides, this strange looking (X rated) antenna hovering sixty-five feet above my house has been the subject of many an interesting conversation.

-- COY, N5OK --

GENERAL DESCRIPTION - The μ A78HG is packaged in a hermetically sealed TO-3 providing 50 W power dissipation. The regulator consists of a monolithic chip driving a discrete series-pass element and two short-circuit detection transistors. A beryllium-oxide substrate is used in conjunction with an isothermal layout to optimize the thermal characteristics of the device and still maintain electrical isolation between the various chips. This unique circuit design limits the maximum junction temperature of the power output transistor to provide full automatic thermal overload protection. If the safe operating area is ever exceeded, the device simply shuts down, rather than failing or damaging other system components. This feature eliminates the need to design costly output circuitry and overly conservative heat sinking arrangements typical of high-current regulators built from discrete components.

The μ A78HG is adjustable 4-terminal positive voltage regulator capable of supplying in excess of 5 A over a 5.0 V to 24 V output range. Only two (2) external resistors are required to set the output voltage. Input and output capacitors should be used to improve input filtering and transient response.

Full thermal overload, short-circuit and safe-area protection are provided.

- 5 A OUTPUT CURRENT
- INTERNAL CURRENT AND THERMAL LIMITING
- INTERNAL SHORT-CIRCUIT CURRENT LIMIT
- LOW DROP-OUT VOLTAGE
- 50 W POWER DISSIPATION

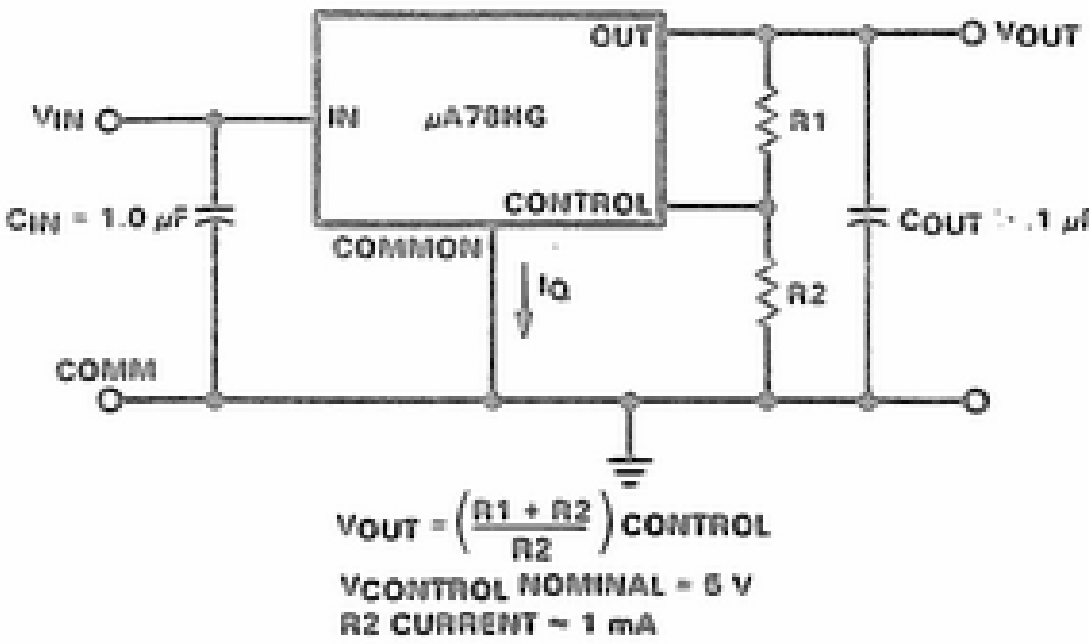
ABSOLUTE MAXIMUM RATINGS

Input Voltage	40V
Internal Power Dissipation	50 W @ 25°C Case
Maximum Input-to-Output Voltage Differential	25 V
Operating Junction Temperature Range	0°C to 150°C
Military Temperature Range (consult factory)	- 55°C to 150°C
Storage Temperature Range	- 55°C to 150°C
Lead Temperature (Soldering, 60 s)	300°C

TYPICAL APPLICATION FOR μ A78HG

In many applications, compensation capacitors may not required. However, for stable operation of the regulator over all input voltage and output current ranges, bypassing of the input and output (1.0 μ F solid tantalum and 0.1 μ F respectively) is recommended. Input bypassing is necessary if the regulator is located far from the filter capacitor of the power supply. Bypassing the output will improve the transient response of the regulator.

**ADJUSTABLE VOLTAGE OUTPUT
5 - 20 VOLTS**





MINUTES

The November meeting was called to order by Prez Bill KB5BS at 7:01 pm at the Air National Guard Base on the 11th with 43 members and guests present representing 121 club members.

The minutes of the October meeting were approved as published in the November Collector and Emitter.

The report of the Treasury by Joe WD5BMP was approved as read, showing 48 members supporting the repeater.

Old Business: requested suggestions for club activities were asked to be turned in at this meeting.

New Business: Specifically due to certain interference, the following club members volunteered to be the Interference Committee:

KB5BS Bill 495-6946 K5UKP Don 685-2380

WB5TMW Dick 685-2867 AE5N Don 681-0133

KB5NV Dave 737-0723 till 21 Nov K9JTW Vern 634-4195

Interested volunteers for the Repeater Control Circuit Construction Committee are asked to contact Don AE5N or Charlie WA4PLG.

On Motion of Charlie WA4PLG and second by Coy N5OK the club agreed to request the Technical Committee to submit a budget for the proposed control circuit.

On Motion of Dick WB5TMW and second by Coy N5OK much discussion followed on whether to support CORA with HealthFair '81 next April and the motion failed.

On motion of Paul WA5HTL and second by Vern K9JTW the club agreed to spend \$100 for prizes at the Christmas dinner/December meeting.

On motion of Don AE5N and second by Paul WA5HTL the club agreed to A.B. WD5ISN and Wanda KJ5C chairing the committee to acquire prizes for the Christmas dinner/ December meeting.

Volunteers wishing to assist with running phone patches for residents of the Wilshire Nursing Home the weekends of 13-14 or 20-21 December '80 are asked to contact Bill KB5BS or Joe WD5BMP to help.

The 76ers unanimously express their appreciation and "TNX" to Jim Townsend WB5VCB of Industrial Electric Company for his invaluable assistance to our Field Day '80 exercise wherein this club placed first in class and third in district; thanks again, Jim!

It was announced that the December meeting will be a Christmas dinner, Tuesday evening, 9 December, upstairs at Cattlemen's Restaurant, same place as last year, 1309 S. Agnew Avenue, Oklahoma City, 6:30 pm.

The club adjourned to the aftermeeting at 8:38 pm after viewing some of Coy's slides of Field Day.

Jim N5BEQ
Secretary

For Sale : CDE Rotor and control, 30' telescoping mast, used tri-band beam Vern K9JTW 634-4195

For Sale ; 12-volt, 6-amp power supply Dick WB5TMW

For Sale ; Heathkit HA-201 Amp \$30, power supply \$30, TR-22 \$100 jim
n5beq

AGE SAGE: HOW TO KNOW WHEN YOU'RE GROWING OLDER or IS THERE REALLY
LIFE AFTER 40 ? : YOUR PACEMAKER MAKES THE GARAGE DOOR GO UP WHEN YOU
SEE A PRETTY GIRL WALK BY.'
jim n5beq



COMPUTER NETWORKS

Home computer owners may dial a number on the telephone and connect to a remote computer system capable of supplying info from more than 2000 data banks and computer programs. More than just a phone number is needed, however. You must subscribe to one of the time sharing networks set up for commercial users, but offered at a lower rate for off-prime-time use. Two networks are described in Popular Electronics June 1980, page 39 and again in Popular Science, November, 1980, page 106. The two networks described are SOURCE by Telecomputing Corporation of America and MICRONET by Compu-Serv. The two nets have some differences. Also the cost can skyrocket. Just as you must investigate carefully before buying a computer and its extras, you must also check out these nets carefully.

What can you do after you connect into one of these nets? You may access stock exchange data, get news reports, have a bulletin board feature, communicate with another, send a message to another or to all users. A few other features mentioned in the two "popular" magazines referenced above are electronic mail, real time messages, and you may be able to obtain information on selected subjects. There's much, much more. Emphasis is on ease of use by not-too-technical persons.

In addition to all the communication features listed, a "CB simulation" program is offered that will convert your computer to a 40 channel CB set so you can chat with others so programmed. This disturbed my peace and quiet. Why have anything like CB? I suppose they will be connecting a leanier between their computer and the phone line. The CB chatter has been a money maker, but why can't industry promote propriety which might also be lucrative?

Despite this CB stuff, the prospects for these nets are fantabulous.

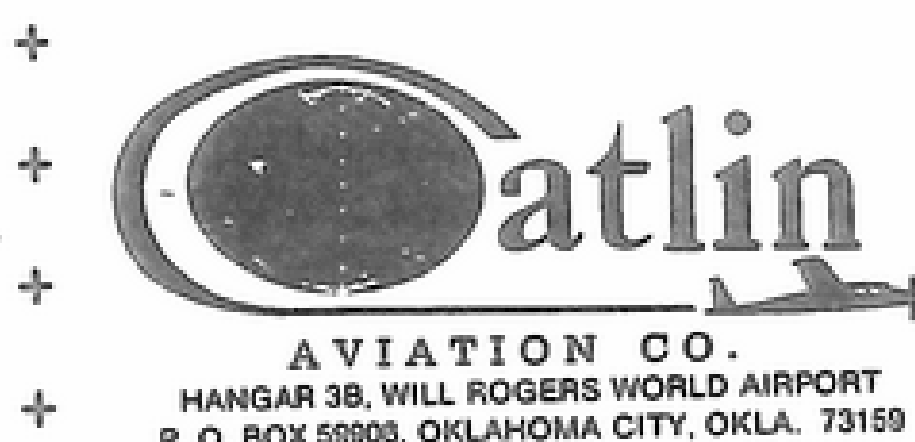
= + = + = + = + = Bill, WA5RAQ = + = + = + = + = + = + = + =

CONGRATULATIONS KRYDER ELECTRONICS

on your SECOND ANNIVERSARY

We appreciate your being here in Oklahoma City to provide us with the latest in amateur radio equipment and supply us with technical advice, service, and comradeship. We're glad you've been in business for two years. May you stay for many more!

— The Collector and Emitter Staff



GENE NAILON - K5DLE
Avionics Manager

OFFICE 405-681-2331
HOME 405-341-8289

WANTS: AVIONICS TECHNICIANS FOR
REPAIR AND INSTALLATION OF AVI-
ONICS EQUIPMENT (NAV/COM, PULSE
FLIGHT CONTROL) IN IN GENERAL
AVIATION AIRCRAFT.

EXPERIENCE IN GENERAL AVIATION
AVIONICS PREFERRED - - BUT NOT
REQUIRED

5-10

NETWORK BATTLE OF THE SYNTHESIZED WALKIE TALKIES-PART II

My comments last month provoked a few responses from various synthesized walkie-talkie owners. The most constructive of these comments came from Larry Waggoner which I reproduce below. Incidentally, through the assistance of Larry WB5CWB, I finally came up with an IC-2AT which I have had the opportunity to fiddle with since the Texoma Hamorama. But I will not digress until after Larry has had his say:

Mike:

I enjoyed your comments on the new world of ham talkies. If you do come up with your dream IC-2AT, I have a couple of ideas for you. First, save your "Omni" HT-220 charger. The IC-2A fits fairly well into one and by moving the charger contact pins over to fit the screw heads in the Icom battery case, you'll have an easy stand up charger. It works on both the regular and BP-4 batteries with the Nicad AA installed. The charge rate is just about right. Play with the lamp to put it where you want it. The IC-2A is easy for you to expand the frequency range. The enclosed article is one I put together for Mars and maybe QST. It might be of interest. Mike, I agree with you on the IC-2A. I never did like a talkie the size of an Omni 220 so that is why I picked the Icom over the Kenwood and others.

73,

Larry

Larry, I really appreciate your comments and, yes, I did finally get an IC-2AT (with touchtone pad you get an extra T on the title) and the radio is everything that I thought it would be. I want to comment on your letter before we get onto the article. The Omni charger is an ideal fit for the IC-2A, but not the IC-2AT with the short battery pack. Before I got your letter, K5JB and I were talking about his IC-2AT and the fact that it would fit in the omni charger, but appeared to be a little short to reach the contacts. If you use the BP-4 battery pack, you stand a better chance of the charging screws reaching to the bottom of the charger. It is just slightly longer than the 230 mil battery pack that comes with the radio. I was able to get a BP-4 and I use it with 6 AA nicads for greatly extended battery life. I will further explain later. Anyway, JB had drilled two holes very close to the mounting screw on the charger sleeve and ran some brass strip for charging contacts. I used his sleeve for a model to build one of my own. Since JB does not have a BP-4 or one of the extended length battery packs, he extended the brass strips up to the screw terminals and put a slight bend in the strips so that they would slide down when the talkie is installed. Another alternative would be to whittle away the front of charging sleeve so that the touchtone pad does not make contact with the front of the sleeve. Whatever you do, if you install the little brass strips as suggested, you then must face the fact that if you insert a HT-220 in the sleeve for charging, you will short the contacts for the IC-2AT since the position of the brass strips exactly coincide with the metal frame of the HT-220. The solution would be to install a separate charging path for the Icom and current limit it so that it can be shorted by the Motorola and not hurt anything. Or you may just want to dedicate a complete charger to your new IC-2AT. JB also suggested that you could install a micro-switch so that could change the charge path by very carefully positioning the switch so that it came in contact with the Motorola frame, but would remain unswitched when the IC-2AT was installed. The Icom battery pack has a couple of holes in the bottom that look like they planned to put charging contacts in each battery case. Positioning the microswitch right under one of these two holes might keep the switch from closing when the Icom is placed in the charger.

Incidentally, I purchased a set of AA General Electric cells since they can be rapid charged for approximately 3 hours at 150 mils. This plus the original battery pack is just about all the battery that I needed.

The original 230 mil battery pack is just not hefty enough to run the radio for very long. My original experiments and daily use indicated that the best that I could expect was just about 3 or 4 hours depending upon how much I transmitted. The advantage of the 230 mil pack was that it had a higher voltage which permitted the radio to run more power (and consequently eat more mils) than the lower voltage BP-4. The BP-4 uses six cells for a nominal voltage of 7.2 volts. The 230 mil pack has a nominal voltage of 8.4 volts. When fully charged, the voltages are 8.3 volts and 9.6 volts respectively. The higher voltage not only accounts for higher power output with the IC-2AT (2.9 watts on my radio), but also slightly higher current drain (540 mils). The lower voltage BP-4 runs 2.1 watts and 460 mils. This power drops to 1.8 watts as the battery comes to nominal voltage of 7.2 volts.

The BP-4 uses six cells (450 ma AA nicads in my case for a total cost of about \$16.00) and the 230 mil pack uses 7 cells. The circuit for the Icom BP-3 230 mil battery is provided below after a dissection by K5JB:

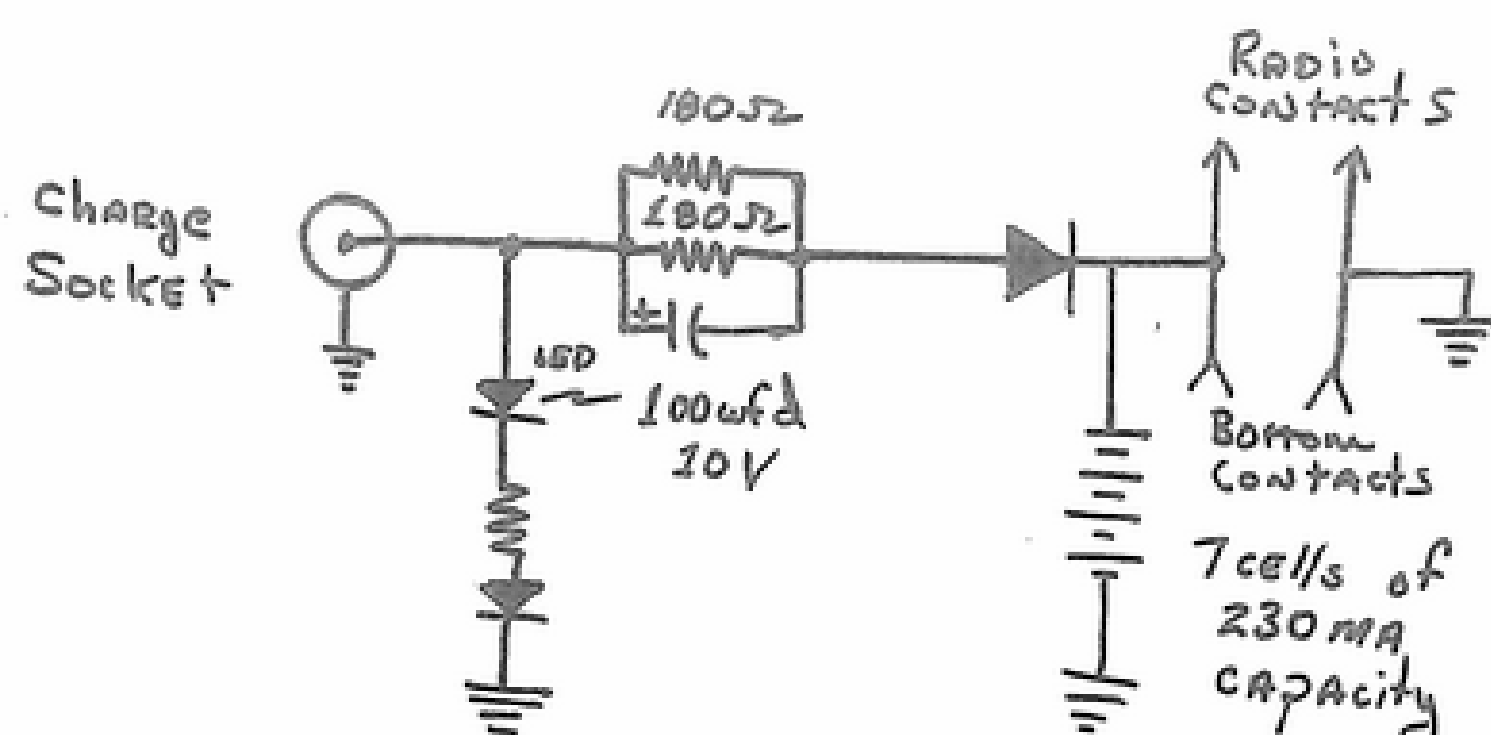


Figure 1. IC-BP3 Battery Pack. The measured charge current with the BC250 charger is 30 ma current.

I am not sure what the 100 ufd capacitor is provided for unless it is to provide a little reverse current charging, but not in the present circuit configuration since it needs to be placed across the diode going to the battery. The LED is shown with a 1.2 K resistor in series, but why the additional diode at the bottom of the leg? What are you doing here Icom? The two 180 ohm resistors limit the current in charge to the battery so you can directly charge the unit from any 12 volt source. (Incidentally, the 12 volt charging plug for the car is nothing more than a cigarette lighter plug with the miniature coaxial connector on the business end. There are no dropping resistors or active devices inside the shell. I presume that you could put rectified ac on the input and it would not hurt the battery. You may need to watch the charging current since the 100 ufd capacitor would increase the overall charging current when dealing with rectified AC. This could be one way of increasing the charging current for different battery packs.

The BP-4 Battery pack does not have any of this circuitry inside it since it is intended for nonrechargeable primary cells. Icom does have a six cell 450 ma pack that is apparently the same size as the BP3, but it is not readily available. WB5DUC has the only one that I have seen. The BP4 pack is more available, but I expect that this is the Icom philosophy at work. Icom always seems to work it so that you have to buy more things than you need. For example, they do not issue new radios with the 450 battery pack. You get the BP3 pack. So if you want a 450 ma battery, you have to buy one. But the 450 ma pack is not available immediately, so you do what I did and buy the BP4 when it comes available and stuff it with nicads. But the BP4 does not have the coaxial charging pin, so you buy the BP2 450 ma battery and relegate the BP4 to standby primary cell status and the BP3 goes on the shelf to turn into a

dinosaur unless you like the high power feature. Now I understand that Icom also has a 450 ma battery that has 7 cells so the power output is higher, and on and on ad nauseum. Icom is so proud of the slip off battery feature that they intend to make every IC2AT owner buy a couple of the batteries just to prove to yourself how clever they are. The cleverness is not in the design of the slide off battery, but in the availability of the various battery packs in such a way that you wind up buying a couple as they become available. I can't believe that they can't stamp out plastic battery packs as quickly as they build these radios. Something is screwy on that assembly line. Oh sure, the low capacity battery packs are smaller, but my coat is not that small. I would not have bought a BP4 if a 450 ma BP2 had been available (How did DUC get one of those XOD HDDDDXXX!L!! things so quickly) And I will probably have to have a BP5 when they come out (9 AA 450 nicads which provided a nominal 2.3 watts (probably 3.5 watts with my radio). And of course, everybody will need the BC-30 charger which is a rapid charger that recharges anybody's battery pack in about 1 1/2 hours. I yen for one of those already. Sigh. This is not planned obsolescence, it is planned demand and Icom is a master at this type of activity. They do it frequently with their radios. The next is so much better than the last and they discontinue the previous radio that you never get ahead.

Let's look briefly at the battery capacity thing. I summarize below the various current drains of the radio:

Battery Condition	Receiver Squelched	Receiver Unsquelched	Xmit Low	Xmit High
BP3 (230 ma) Fresh Charge of 9.6 Volt indicated (2.9 Watts Hi Power)	20 ma	40-120 ma	250 ma	540 ma
BP3 (230 ma) Nominal Voltage of 8.4 Volts	20 ma	40-120 ma	220 ma	480 ma
BP4 (450 ma) Fresh Charge of 8.3 Volt indicated (2.1 Watts Hi Power)	20 ma	40-120 ma	195 ma	460 ma
BP4 (450 ma) Nominal Voltage 7.3 Volt indicate	20 ma	40-120 ma	185 ma	400 ma

Chart 1. These are some various current drains for the BP3 and BP4 battery packs when freshly charged and for nominal voltages that can be expected during most of the battery charge cycle (roughly 90%) Battery voltage will elevate during the end of a charge cycle to approximately the voltages indicated. Receiver unsquelched measurements are from volume less than 50% to full volume.

Why all the jive over the minutia of the battery packs for the IC2AT? There is a reason for it in that synthesized radios draw quite a bit of current as was indicated last month. One of the most common complaints of the IC-2AT is the lack of battery capacity. The BP3 (230 ma) dies a quick death in short duty. What is a practical method of determining battery life? Well, the duty cycle calculations to be presented represent a compromise, but parallel Motorola's method of calculating battery life. Motorola uses two different duty cycles. For the larger battery "omni" radios, Motorola uses a 10-10-80 duty cycle. That is a 10% transmit, 10% receive unsquelched and 80% receive squelched. For the smaller battery "slimline" radios, Motorola uses a 5-5-90 duty cycle. This is a 5% transmit, 5% receive unsquelched and 90% receive squelched.

Let's take the 230 ma BP3 and calculate a 10-10-80 duty cycle which I figure is more practical for amateur service since I think that the amateur does a lot of listening and blabbing. Let's figure the current drain for a typical "one" hour and divide into the total current capability of the battery to determine the battery life:

	Current Drain		Time (min)
Receive Squelched	16 ma	(20 ma x .80)	48 min
Receive Unsquelched	5 ma	(50 ma x .10)	6 min
Transmit Hi Power (2.2 Watts)	48 ma	(480 ma x .10)	6 min
Total Hourly Current Use	<u>69 ma</u>		

In our "typical" hour we will use 69 ma of our available 230 ma battery capacity. To obtain a duty usage, we divide 69 into 230 ma or 3.33 hours. That is not much usage. For your trouble, you get a total of 19.98 minutes transmit. Anybody who has listened to some of our less bashful repeater users know that many of these people could not even say hello and how are you in 20 minutes of transmit continuously, much less spread of 3.33 hours. The only way around this problem is to walk softly and carry a bigger battery pack.

Let's figure a "typical" hour for the BP4 450 battery pack.

Receive Squelched	16 ma	(20 ma x .80)	48 min
Receive Unsquelched	5 ma	(50 ma x .10)	6 min
Transmit Hi Power (1.5 Watts)	40 ma	(400 ma x .10)	6 min
Total Hourly Current Use	<u>61 ma</u>		

For this "typical" hour we use 61 ma and derive a total duty usage of 450 ma divided by 61 ma or 7.38 hour. For our double battery capacity we get approximately 44.26 minutes of transmit. Now this is something to at least get you through the hellos and into the QTH's and Weather. For some, this might not get them past the warm up.

To save you the calculations for low power, I reproduce my calculated values below and specify the total duty usage time:

	Hourly Current Usage	Duty Usage	Total Xmit Time
BP3	Hi Power (2.2 W)	69 ma	3.33 hours
	Lo Power (200 Mw)	43 ma	5.61 hours
			19.98 minutes
			33.66 minutes
BP4	Hi Power (1.5 W)	61 ma	7.38 hours
	Lo Power (150 Mw)	40 ma	11.25 hours
			44.26 minutes
			67.50 minutes

Now we are getting somewhere. I mean, even I could wrap up an entire day in about 67.50 minutes of yakking. Tack on an extra battery and the Icom offers perhaps the best alternative to the power hungry synthesized scanning behemoth. Remember, you need to get along on 150 milliwatts for the bulk of your hamming. I have found that I can get along quite well on the local 88 repeater from just about anywhere in Norman. I occasionally have to switch to high power when I found a particularly bad spot or have to make a path into Oklahoma City. It is amazing what low power VHF can do. And remember that Icom will eventually make a high power 450 ma battery available, but any duty cycle would have to be lower than the Lo power BP4 figures since these represent the lowest current drain for the maximum battery size (450 ma) I find that I have no trouble keeping the radio around all day listening to the repeater and occasional QSO and autopatch conversation with no trouble.

These numbers are just that. Numbers, and approximations at that. So don't take them as gospel, but guidance. For the person who is hard of hearing and needs to crank the volume up, the duty cycle changes. Endurance figures also change if you listen to a busy repeater that blows and goes all day long. To give you an idea of how fragile this calculation might be, you could drain your battery completely if you listen to a continuously busy repeater at slightly less than full volume in just a little under 4.5 hours. This is without transmit time at all.

So sit down with your favorite Walkie and calculate its endurance. I have found that my Motorola can go several days without charging even with 24 hours use on a lightly used channel. I need to charge the Icom every day. How does your radio stack up?

Micheal Salem N5MS

GO TO MARS ON THE ICOM IC-2A TALKIE

As I indicated previously, Larry Waggoner sent me an article on adding Mars frequencies to the IC2AT or IC2A walkie talkie. K5JB had discovered the same technique the same day he got his IC2AT and related it to me the next day. I converted my radio to do the same thing the same day I got it. Mine did not work entirely and JB and I worked out a fix that I will explain later plus give you an idea of the performance of the radios outside its normal range. Remember, you can listen on any frequency you want, but the conversion that Larry details here will allow the radio to operate anywhere from 141.5 Mhz to 149.99 Mhz. **DO NOT TRANSMIT OUTSIDE THE BAND UNLESS IT IS ON AN AUTHORIZED MARS FREQUENCY AND YOU ARE LICENSED.** I have not run out of frequencies between 144 and 148 yet, so I certainly have no reason to select new frequencies where I am not invited. You may need to readjust the VCO as indicated later to allow the receiver to move outside the band.

One other thing, as Larry indicates, the conversion does not allow the same offset split for Mars operation since Mars does not use a 600 KHz split. If you are really serious about the Mars conversion, you could replace one of the offset positions in the radio or perhaps work out a diode switching arrangement using the +600 kHz and -600 kHz position when the Duplex-Simplex switch is in the Simplex position. There would be room to add an extra crystal, but it could be a tight fit. The radio is easy to get into and service is extremely easy (for Icom) because the radio comes apart like a book. And Now, Heeere's Larry!

IC-2A GOES TO MARS

The new Icom IC-2A is one of the best 2 meter talkie buys on the market today. A problem for Mars members is that the IC-2A is amateur bound. No matter what the thumbwheel says, it will only tune from 144 Mhz to 148 Mhz. This was done by the manufacturer by strapping the binary 4 output on the thumbwheel megahertz switch and by opening the binary 8 output to the PLL chip of the same section. An investment of 15 minutes of your time can open up the world of MARS to your IC-2A!

First remove the battery pack, exposing the metal battery mounting clip at the bottom of the unit. Take the clip off by unscrewing the two recessed smaller screws, located along the outer edges, across from each other. Remove the back cover by pulling it down and away from the radio. Pull the front cover down and slightly away from the frame. Be careful that you don't stress the connecting wires going to the front.

Closely observe how the black push to talk lever fits into the case parts. This

will be a big help when you reassemble the radio.

Look into the front side of the frame at the area just below the thumbwheel switches. Find a brown wire which is a jumper between two sets of switch contacts. Carefully clip this brown jumper out of the circuit. Do not disturb the green wire which shares a common contact with the brown jumper. It may be easier for you to reach the lower contact by removing the two screws on the side of the frame. The two PC boards may now be spread apart by opening them like a book. Your IC-2A will now operate below 144 Mhz. Please refer to Figure 1. (excerpted from the Icom Instruction Manual).

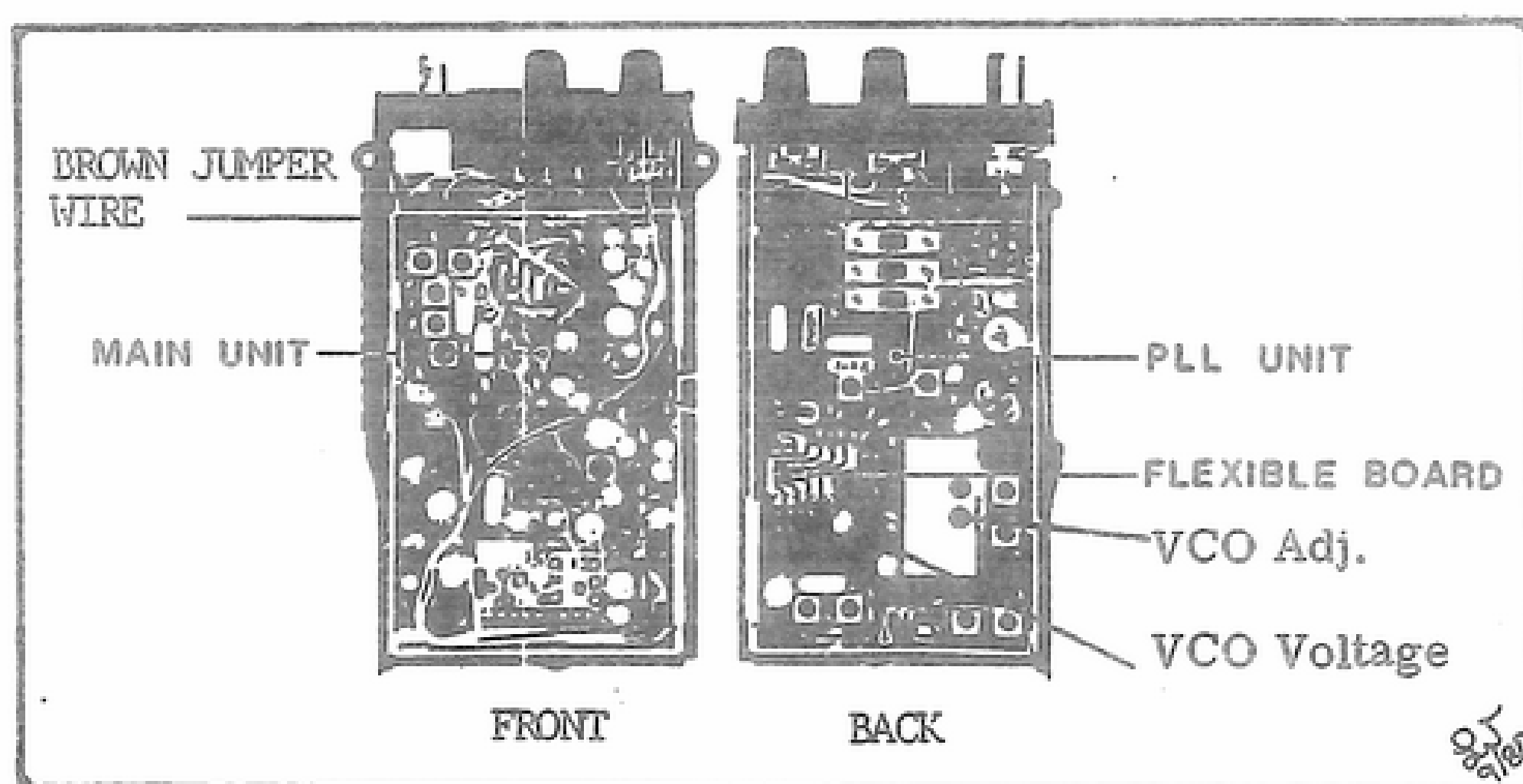


Figure 1. Detail of removal of brown jumper wire on inside of radio. Radio is shown in the spread position. Also note detail on Back Board for VCO adjustment necessary if radio does not properly operate on Mars frequency. (See Editor's Note at conclusion of article; My radio also does not have two holes in the VCO box. That is the only adjustment necessary, if needed at all. The VCO voltage can be measured on the right side of the chip just below the flexible board as noted in the Editor's Note)

Turn the radio over to the back or PL side. You will see a flexible circuit board which goes to an integrated circuit in the lower middle left hand side. Solder across a gap in the foil on the bottom set of contacts, the fifth or last contact away from the fram. This contact will be in the lower center of the chip. The radio will not program above 148 Mhz. Please note the detail in Figure 2.

As you reassemble the radio, insert the push to talk lever halfway into the front case. Slide the top edge of both the front and back case into the fram and bring the bottom together. Make sure both case parts fit tightly together and up against the radio top.

Your IC-2A will now operate from about 141.50 Mhz up to 149.995 Mhz. My unit with 2 watts output at 146 Mhz still puts out over 1 watt at both frequency extremes. The receiver sensitivity holds almost constant throughout the range.

It is beyond the scope of this easy conversion to offer a transmitter offset for the MARS repeaters. It is possible to work into the repeaters on simplex with some fast thumbwheel switch work. I use my IC-2A to listen to Mars activity while I'm away from the "big rig." This 15 minute conversion has been Mars time well spent for me.

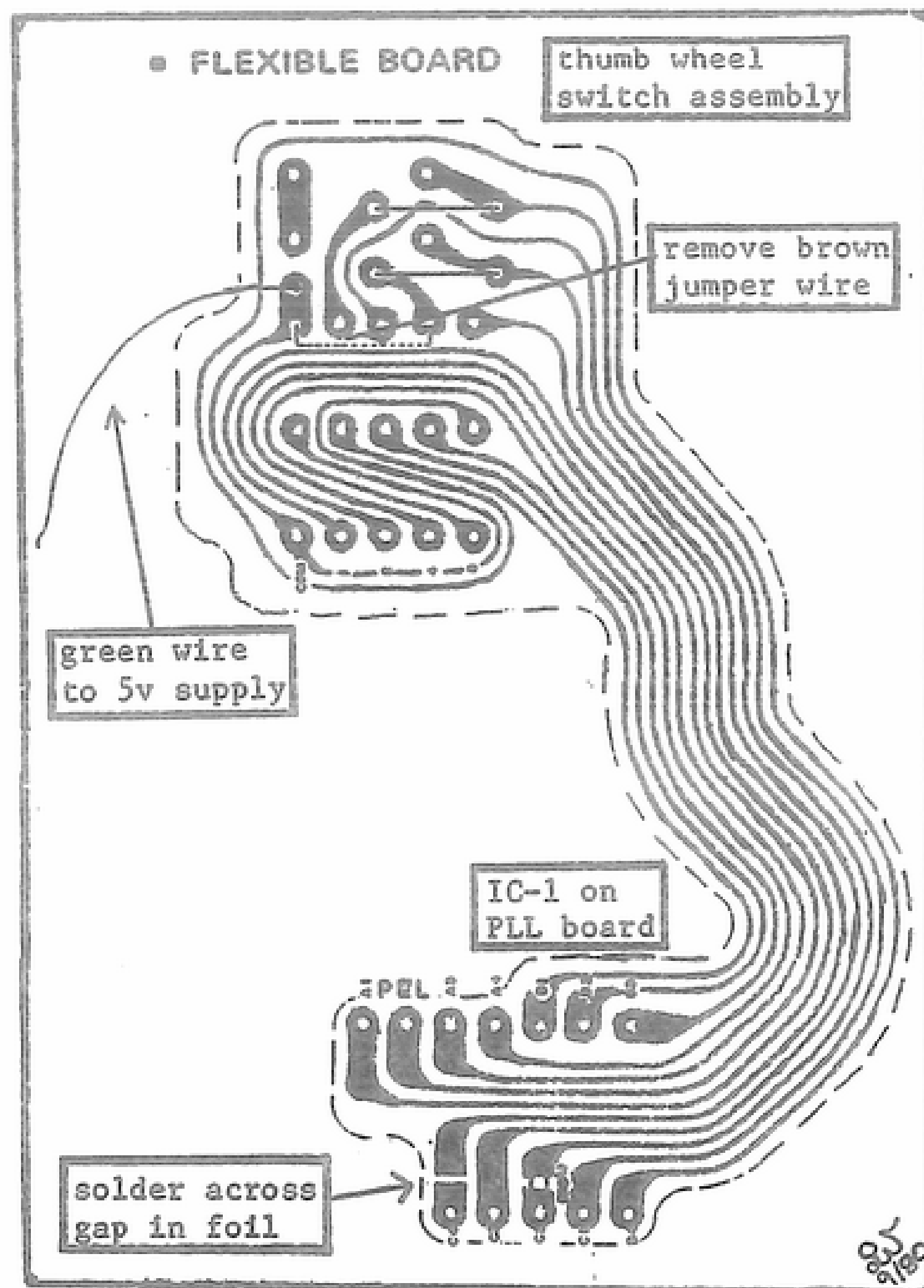


Figure 2. Detail of the Flexible Board that shows the solder gap to be bridged. It is difficult to make the bridge with just solder. I suggest that you use a fine wire wrap type wire. This detail of the flexible board shows both wiring changes to be made at each end of the flexible board.

Larry Waggoner AFB3FP/WØKA

I want to thank Larry for reducing the conversion to writing and supplying the drawings. Perhaps he can eventually work up a conversion for the transmit offset. I want to point out a couple of problems that I had with my conversion the K5JB and I put together a solution.

After I had completed the change, I found that the radio would not receive above 148.25 Mhz. A check of the schematic indicated that the VCO Voltage comes out of IC2 of the synthesizer (Phase Detector TC5081) at pin 3. We could not reach pin 3 from the top of the board, but the voltage is the same all along R4, R6, R7, and D3 since the Varicap D3 is reversed biased and no current flows in the circuit. The service information in the manual indicates that in the receive mode that pin 3 of the Phase Detector, IC2, should have 1.2 volts on it at 144 Mhz. Humm. My voltage was almost 2.4 volts. Since the frequency goes up as you dial in the higher frequencies, the VCO was running out of gas at about 148.5 Mhz. L3 of the synthesizer (inside the metal can) is the VCO Free-Run Frequency Adjustment. While measuring the VCO voltage along the path out of IC2, pin 3, K5JB had me adjust the VCO voltage. I eventually left the free running voltage at 1.3 volts. Incidentally, the diagram picture on page 20 of the manual shows two holes in the VCO shielded box, but my radio only had one and that one was L3. Adjust it so that you read 1.2 to 1.3 volts on the VCO voltage path. And remember the W5OU rule. "If it aint broke, don't fix it." Keep your screwdriver or tuning tool out of the radio if you can

transmit and receive on the Mars ranges indicated. My radio would transmit and receive on the ranges that Larry indicated. The power output into my dummy load bird (no offense) was as follows:

Frequency	Power
141.0 Mhz	.8 Watts (Unstable)
141.1 Mhz	.9
142.0 Mhz	1.3
143.0 Mhz	1.8
144.0 Mhz	2.2
145.0 Mhz	2.4
146.0 Mhz	2.6
147.0 Mhz	2.6
148.0Mhz	2.4
149.0 Mhz	2.2
149.5 Mhz	2.0
149.995 Mhz	1.8

These measurements were with a fresh charge on the battery and battery voltage at 9.47 Volts. At 2.6 watts, the radio draws 520 Ma and at 200 MW, the radio draws 200 Ma.

These are fairly impressive figures and I agree with Larry that there is no really noticeable differences on the receiver across the band, or at least none that my calibrated output source would really make a difference on. Just goes to show how well some of these new broad band designs work. Viva La IC-2AT.

By the way, the last few pages of ramblings and conversion articles are not a commercial for the IC-2AT. I just happen to own one. There are several good radios on the market. I like the Icom because of its size and easily removed batteries. (Little did I realize the financial investment I would make in batteries for the radio). I still don't like the squelch sound because it is not crisp and clean like the Tempo and it seems like the audio level distorts at high volume settings on receive, but the radio can fit in an inside coat pocket with a minimal amount of pocket pressure. With a winter weight suit, it is not noticeable at all unless you let the antenna poke out from under the coat in which case people ask you why you have a stalk of licorice sticking out of your pocket. That's the breaks. By the way, the Icoms are very scarce right now. Some places have an umpteen week waiting lists and others won't keep a list and will only go first come, first serve. Accessories and battery packs are not even available except in the rarest of cases. Good luck hunting.

Micheal Salem N5MS

FOR SALE: What, no bid yet for my IC-30A UHF Transceiver with 444.1, 444.2, 444.3, 446.5 and 444.0 in the form of various simplex and repeater frequencies. The radio is high power and low power and comes complete with an ME-3 pl encoder already in place and percolating. I got your basic manuals and schematics for the radio and it is ready to drive off the lot. Don't want to insult me with an offer? Insult me. The worst I might do is refuse it. The radio will accept the Drake 1525 Touchtone encoder. So try again. Micheal Salem N5MS, 321-5453 or 360-1302.

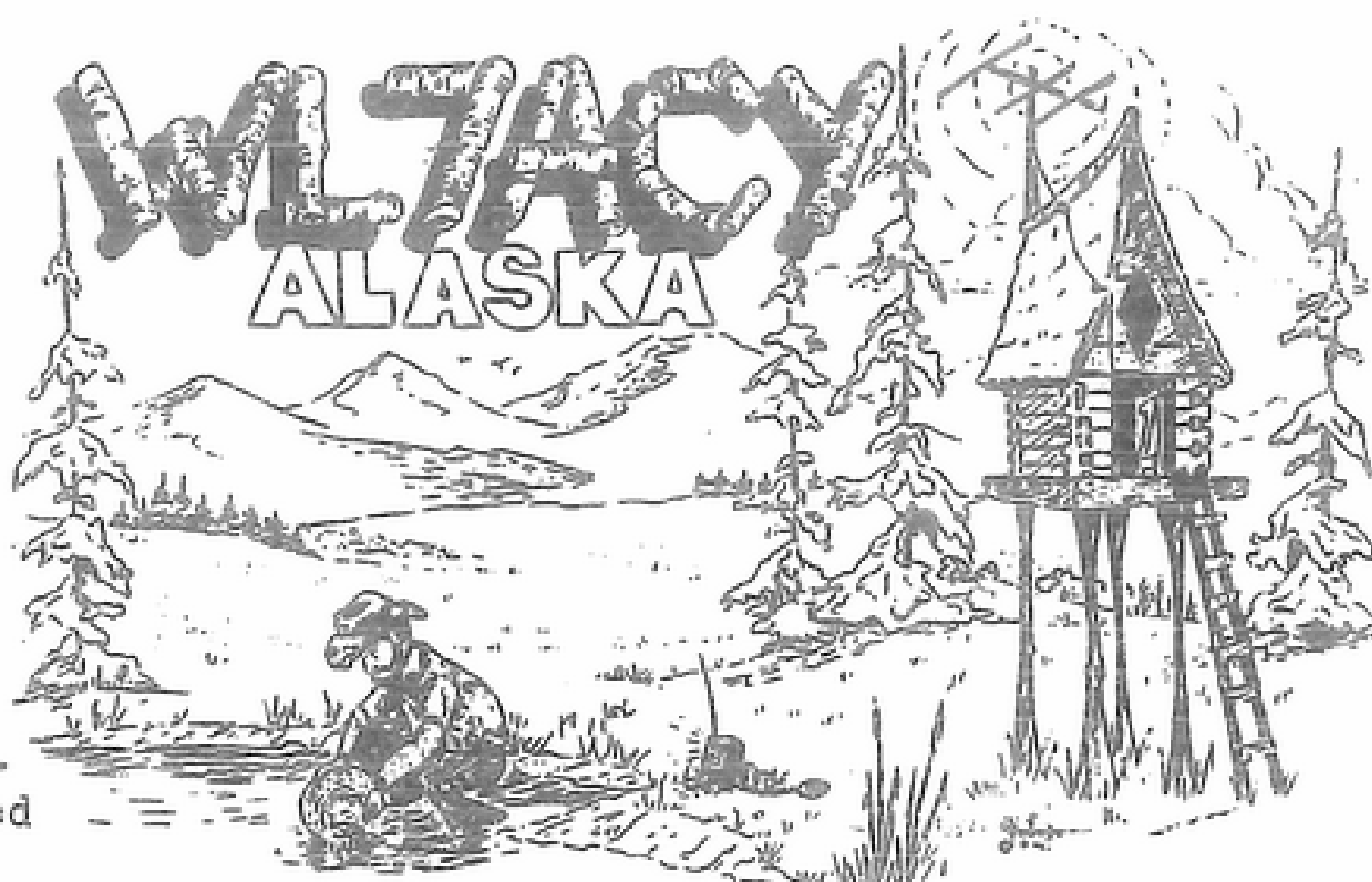
FOR SALE: TS-820 10-160 transceiver with MC50 mic, \$550.00. Ten-Tec 509 Argonaut QRP 10-80 transceiver with power supply & mic, \$200.00. Call Gene, WD5IOE, 721-2889.

FOR SALE: Swan SS-200A, solid state 5 Band transceiver, PS-20 power supply, speaker, mic., all for \$375.00. Ray, WB5BTT, 732-6498.

ALASKA-TO-OKLAHOMA PATH
REPEATEDLY CONFIRMED ON
THE SIX METER BAND!

For eleven straight days in mid November, several KL7 stations were worked all across the continental United States as VHF propagation repeated its incredible performance of Winter '79.

Signal reports between 57 and 30db over S9 were logged as conditions prevailed for three solid hours on every day of the openings.



CONFIRMING CONTACT ON 50MHZ SSB

Yes, six meters is alive and well - - and living in more than just the hearts of several thousand radio amateurs worldwide. Several intercontinental openings occurred during November and December of 1979 and, much to the delight of us all, a spectacular encore performance for Winter '80 is now in progress.

This sunspot cycle peak, referred to by scientists as "Cycle 21", has proven without question to be the very best one since such phenomenon was discovered more than two hundred years ago. Solar and geomagnetic activity have been so high that the 50MHz amateur band (television channel one in many countries) is being quite seriously studied as a long-range, serious DX band.

Normal 50MHz DX communication is not very predictable. It results from the reflection back to earth by the "E"-layer of the atmosphere. These "sporadic E" band openings occur often throughout the year and don't seem to be dependent upon variations in solar activity within an eleven year cycle. We are very fortunate as six meter enthusiasts to live in Oklahoma, for E-skip is of a range between 500 and perhaps 2,000 miles. This enables us to communicate with other stations in all of the continental United States every year (and Canada and Mexico, as well).

For those six meter enthusiasts near one end or the other of the continental US, communication with all other states is virtually impossible. This can occur on "double-hop E-skip" but that is, of course, very rare. This is one of the best of reasons for the tremendous excitement that sweeps across the globe as the eleven year sunspot cycle approaches its peak: THE EARTH'S F-LAYER IN THE ATMOSPHERE WILL BEGIN TO RETURN THESE VHF SIGNALS TO EARTH - - THOUSANDS OF MILES FROM THEIR PLACE OF ORIGIN!!! One reason for the excitement during this period of Cycle 21 is that, during the late 60's peak, not much activity was observed. Records seem to support the theory that such incredible F-layer skip (called "F2") happens best during every other sunspot cycle peak!

This F2 skip is the same stuff that makes the HF bands span the globe. The F2 propagation which we have been enjoying on 50MHz is very similar to the conditions which exist on the ten meter band: Europe and Africa in the morning, South America at midday, and Japan and Australia into the afternoon and evening.

For example, as the KL7 stations signals began to fade near the close of the band openings which I first mentioned, Japanese stations were worked from here on no less than four different openings. During one opening to Alaska on November 10, 1980, two Hawaiian stations were being worked here while the band was still skipping into Alaska and Japan, as well. That was an opening to three continents all at once.

50MHz WORKED-ALL-STATES CONGRATULATIONS

With all this long-haul F2 DX being worked on six meters, many operators all over the world are not only logging great contacts but QSL'ing and applying for many operating awards. Four men in central Oklahoma are to be congratulated for their completion of the 50MHz Worked-All-States Award. I'll give you their names and call signs; then a brief summary of their personal information:

W5VCJ - TW "Steve" Stevens: Steve lives east of Edmond, OK and has been an active 50MHz DX'er since the sunspot cycle peak in 1957-58. He confirmed 47 of the then 48 states back then (needed one New Englander to finish). He's got Alaska and Hawaii from those late 50's openings, but had to work them again after they became states. He also received his Worked-All-Continents award from his activity in the late 50's. Just for the record, Steve is the fellow who first sparked my interest in six meters some fifteen years ago. His stories about hearing video pulses all over the band when it was open to Europe in '58 just made my hair stand up! I did finally hear that stuff in December of last year on no less than five occasions, so THANKS, Steve - and congratulations on your 50MHz WAS!

K5GBN - Johnny Fish: John lives in Calumet, 40 miles west of here. He was licensed near the end of the F2 activity in the late 50's, but he did pick up a few good DX contacts back then. He's been a faithful 6-meter buff throughout all the E-skip activity during the late 60's and mid 70's. I heard him work his Alaskan station last winter for number '49 and also caught his contact with KH6IAA in Hilo, Hawaii for number 50 in Nov '80. Congratulations on your 50MHz WAS, Johnny!

K8JRM/5 - Capt. Thomas Laszynski: Tom was stationed here during the early '70's. The Air Force then shipped him to Hawaii where he was assigned for a few years. He requested to be assigned here in OKC again, and returned to Oklahoma - and his six meter activity. When he left here, he had 46 states confirmed. He did not toss out the cards and, upon his return, wrapped up the effort with Alaska, Hawaii, and Nebraska for numbers 48, 49, & 50. At times when he was here before, we would read QST to each other over the air on six meters in an effort to keep the activity rolling on those DEAD winter nights! Congratulations on 50MHz WAS, Tom!

KA5DDE - Mike Crews: Mike bought an Icom 551D transceiver in March of 1980. He put a six meter beam on his tower and started chasing states on six meters in April. Six months later, Mike wrapped up his 50MHz WAS! His timing was excellent, but he's also a fine operator. He worked 35 states in his first 35 days on the air (sporadic E in April & May). He has eight countries total and I heard him work KL7 KH6, and Nebraska for numbers 48, 49, & 50. Congratulations on your 50MHz WAS, Mike!

IRELAND

Ei2W



6 METRES

HERE'S A PREVIEW OF COMING ATTRACTIONS:

This card confirms a contact in December of '79. The band repeated its KL7 openings to the day from last year. If this holds true looking NE, then Europe will be worked here in early December of '80.

All interested ops may tune 28.885MHz for our worldwide DX net, or 146.46MHz for local reports.

73 - Bill Riddles
N5WM

FOR SALE: Approximately 2600 ft $\frac{3}{4}$ " strand, excellent for guying tower. Available in two pieces approx 1300 ft each. Leonard Hollar, WA5FSN, 710 S 10th St, Kingfisher OK 73750.

The South Canadian Amateur Radio Society

EDITOR: Jack Bickham, WB5TZZ

329-1311

SCARS ELECTS KB5EK PRESIDENT FOR 1981

The South Canadian Amateur Radio Society elected Wade Anderson, KB5EK, its president for 1981 during the regular business meeting November 15. Wade, of Moore, takes over from John, N5ABC, acting president since late this summer.

An Extra Class amateur interested in local nets and CW DXing, Wade is also one of Oklahoma's Official Observer stations.

Others elected at the SCARS Saturday meeting were Chuck, KA5GFL, vice president, H.O., WA5MLT, treasurer, and Sam, WA5RPP, secretary. WB5TZZ was named to continue as reporter for C&E.

Wade took the chair immediately after the election. First order of business was to thank N5ABC for stepping into the breach when then-president KB5DK left the state for new employment in the East late in the summer. N5ABC will continue as technical guardian of the W50U/R repeater sponsored by the club, aided by W5MCN.

Named the new CORA delegates, effective immediately, were AF5X, K5KDR and WB5UUX.

Wade raised the question of SCARS becoming an ARRL affiliated club, and a quick poll of members present showed all but one as members of the League. Since ARRL affiliation for a club is possible with one over 50 per cent membership, SCARS is eligible by a wide margin. The club intends to investigate details of affiliation, and probably will take action on the question in January.

Members also talked about purchase of a club gin pole, climbing belt, and possibly a wattmeter. Chuck was assigned to get prices and report back in January.

In other action, members voted to move the monthly business meeting from the third Saturday of each month to the second Saturday...this to make reporting for C&E more timely. There was a lively discussion of having some meetings on Friday evenings, including possibly some dinner meetings. The question was put on the agenda for January.

It's hoped more members will be able to attend in January as a result of a December membership drive. SCARS dues and repeater support come due each year in December, and the club voted to send letters to all present members as well as other amateurs in the immediate area who may be interested.

Club dues are \$6. Repeater support is "open," but most users last year gave in the \$15-\$20 range.

The SCARS meeting in December will be the annual Christmas party, and no business will be transacted. (See next page)

NEW CLUB ACTIVITIES MULLED; ACTION LIKELY IN JANUARY

After a transition period, it looks like SCARS will be getting itself more involved in amateur radio and community activities starting around the first of the year.

Possible projects discussed during the November meeting, after election of new officers, included a message-handling booth at Norman's Sooner Fashion Mall or some similar location; more educational meetings, and/or participation in a DX contest from a club station set up in some public place such as the Mall.

SCARS has a Kenwood station active from the Cleveland County Red Cross on both hf and vhf. In the past it has conducted ARES emergency training, sent members to Red Cross classes, and conducted prospective novice training in addition to the usual activities such as Field Day.

MORE TOWERS SPROUT IN EASTERN CLEVELAND COUNTY

WA5RPP is the latest SCARS member to have a new tower and beam. Sam's 75-foot chunk of Rohn 25G is topped by one of the new TET beams with four trapped elements, two of 'em fed in phase. The W50U antenna farm, meanwhile, has both the 50- and 77-foot towers completed and, and at this writing, the beams being assembled on the ground. Gordon's rhombics will stay. The WA5RPP and W50U towers are east, not far from Lake Thunderbird, making that an rf alley....

N5MS, meanwhile, is said to be brooding about antenna tuners -- even carrying rotary inductors around in the back seat of his car. When Salem starts meddling with random wires and tuners, the hf bug has really bitten bad. He even has new

Continued



(continued) QSL cards. Honest. Filled one out for WB5TZZ....

Meanwhile, back at the Chigger Ranch, H.O. is happy again. His much-traveled TR7 is back and doing very nicely, thank you, after some surgery in Ohio....

WB5QNK back after a month on the road, and Carl says he wants to get active in hamming again, which is good news....

ONCE MORE FOR THE SCARS CHRISTMAS PARTY

They're going fast -- available spaces for the third annual Norman amateur radio Christmas dinner, scheduled for the President's Dining Room, Commons Restaurant, OCCE in Norman.

Tickets are \$6 each. The dinner is at 6:30 p.m. (sharp!) on Saturday, December 13. Send your money to Bill Oliver, K5KDR, to get on the attendance list before the last available spaces are filled.

RED FACE DEPARTMENT (PART II)

A couple of months ago your intrepid reporter told how a check to the ARRL for a lifetime membership had evidently been ignored, although a postcard came after three months saying a quarterly installment was due -- except that someone had written on the card that no payment was due "at this time."

Thanks to WA5MLT, SEC and general wonderful person, a telephone inquiry went to Newington not long after that column came out. Conversation went like this:

WA5MLT: This amateur in town sent a check for a life membership and that was four months ago, and no word. How come?

Lady At the Other End: What's his call?

WA5MLT: WB5TZZ.

LATOE: Oh, yes. We have his check here. He sent twenty times the annual membership fee and we don't know what to do with it.

WA5MLT: Isn't that what he was supposed to send?

LATOE: Oh, no. The life membership is twenty-five times the annual fee, so we didn't know what to do, so we haven't been doing anything.

WA5MLT: Oh.

Well, as it says in one of the Dentron owner manuals, "When all else fails, read the instructions." I have sent the ARRL the additional money. My hopes are high again. Maybe I'll get to be a life member yet.

If I live that long.

CODE TAPES: SOMEONE IS DOING SOMETHING (W)RIGHT

Many amateurs need a morse code tape at one time or another...getting started, trying to upgrade, or simply for brushing up. There are many such tapes available. ARRL tapes, 73 tapes, and those from Ameco are well-known and useful. Being a slow learner and not enamored much of CW generally, I've had recourse to all of them at one time or another when the code speed slipped badly from lack of practice.

Best of the bunch, however, may be the relatively new Wrightapes, an outfit headed by W8QN in Lansing, Mich. You may have seen the small ad in QST.

Wrightapes offers cassettes from plain language or code groups at 3 WPM to plain language at 40. Tapes are available that simulate the new FCC QSO tests at various speeds. A tone of about 700 Hz is used, and quality is excellent.

Unlike the 73 tapes, which require six weeks for delivery according to their ads -- and sometimes never come at all -- Wrightapes promises same-day delivery... and delivers on the promise. In this day and age when advertised promises so often mean disappointment for the believer, it's a pleasure to do business with an outfit that does what it says it will do.

Even better, these tapes are quality-recorded on Scotch-3M tape, and the cassettes hold up. At \$2.95 each, they are an amazing bargain; many of the competitors use cheaper cassettes, and charge considerably more.

For more info, check the small ad monthly in QST. You aren't likely to be sorry.

OLD TUBE DEPARTMENT

One of the monthly publications lists the following as good sources for older vacuum tubes: Richardson Electronics, Ltd., 3030 North River Road, Franklin Park, Ill., 60131; Fair Radio Sales, Inc., 1016 East Eureka, PO Box 1105, Lima, Ohio, 45802; and Thor Electronics, 321 Pennsylvania Ave., Box 7070, Linden, N.J. 07036.

Shawnee Amateur Radio Club



W 5 S X A

EDITOR: Jay Tingler, WD5BUQ 273-3033

S E T: The Simulated Emergency Test on 19 October 1980 had S A R C involved in a simulated tornado disaster in Tecumseh. The scenario included total destruction of six homes and two businesses. Six other structures had major damage and several persons were said to be injured. Amy Jones, Chapter Manager for the Pottawatomie County American Red Cross unit simulated establishment of an emergency care center at the Tecumseh American Legion building. The Tecumseh Police and Fire Departments responded as required. (Even had an actual fire call during the drill.) Ambulance services responded in a very short time after being summoned via the WR5A0Q autopatch. (They also had an actual emergency at Hiways 9 and 102 near the end of the drill) Members of the Tecumseh High School drama class volunteered as injury "victims" and the Civil Air Patrol and Tecumseh Civil Defence volunteers rounded out the emergency forces. Of course amateur radio played an important role in the overall operations. Portable stations were assigned to the various units in the field and a net control station was established in the Civil Defense Communications van in the disaster area. The S A R C call, W5SXA, was used by net control. The drill started at 1310 local. The CD van was set up and communications established by 1316. The drill was terminated at 1548. Earl Couch, WB5ZBA, Emergency Coordinator for Pottawatomie County is to be commended for putting together a very fine - brief but comprehensive - exercise for us. There were lessons learned and that's what it's all about. Amateurs participating in the drill included:

EARL, WB5ZBA
CARL, K5OQD
OLIVE, WB5RAY
CHUCK, N5BMV

BOB, K5LZF
TOMMY, W5NMN
JAY, WD5BUQ
JERRY, N5AUP

JIM, KA5FBC
DALE, WA5BOA
WALT, KA5FIT
JIM, WD5ITV

NEW HEADS: New officers for 1981 for Shawnee Amateur Radio Club are Bob Almand, K5LZF - President; Walter Fultz, KA5FIT - Vice President and Jim Sullivan, KA5FBC - Secretary/Treasurer. Fine business.....

JUST CALL HIM "ELMER": One of our youngest spirits is "old-timer" Bob Almand, K5LZF. His enthusiasm for amateur radio - and just about everything else - rubs off on everyone nearby. I, for one, am pleased that he has touched my life and I am also pleased to pass on the following story from Bob's own hand. 73, JAY WD5BUQ

AMATEUR RADIO DEMONSTRATION AT BETHEL SCHOOL: On November 14th, a cold, cloudy and misty day, five of us old tired and retired QRMers left for Bethel School in Bethel Acres, Oklahoma. Namely, Ray King, W5LXH; Paul Brown, W5IQL; Melvin Miller, K5KXL; Jim Sullivan, KA5FBC; and Yours Truly, K5LZF. This was a prearranged demonstration which had actually developed from our display at the county fair grounds. We were approached there by one of the science teachers - Mrs Gaines, asking if we would be interested in giving a little demonstration for her class which consisted of about 80 students from the 11 to 17 age group. And I opened my big mouth and said "We certainly would," not realizing it would ever develop as it did. Later, I was surprised to get a call from Mrs Gaines reminding me of my acceptance of her request. To make a short story of it, plans began to develop, the wheels began to turn in my head, thinking - "What have I got myself into." But as plans developed, to carry this out, naturally I would need some help. I began to contact others. Some were working and could not assist as this was on a Friday. Others I contacted were not sure if they could make it. I knew there would be antennas to raise, equipment to be moved to location; what would I discuss? What material is the science class studying? And ten thousand other questions began to arise. Two days before the deadline I received confirmation of assistance from the retirees mentioned. This was when I breathed a sigh of relief - WOW!



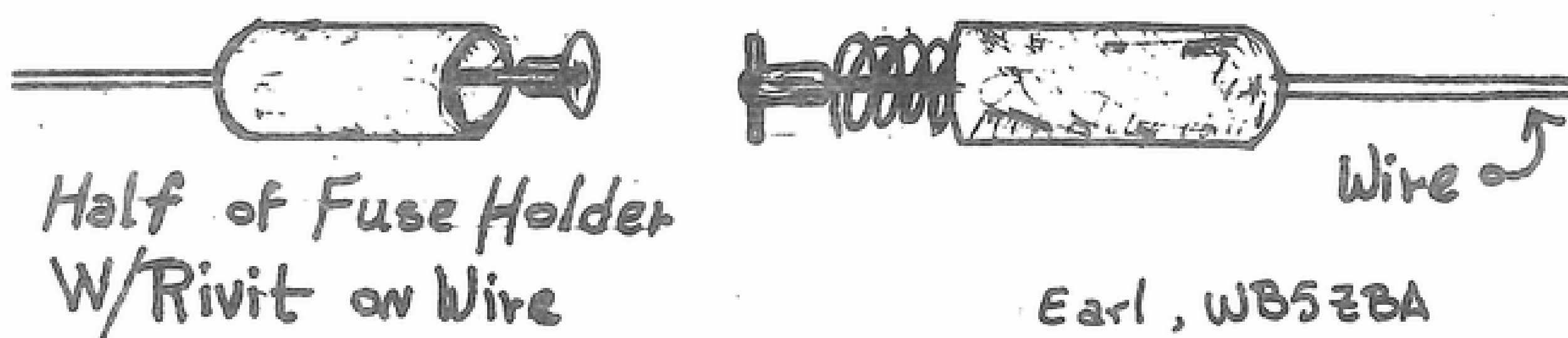
But all is well that works well - so we arrived there at 12 o'clock noon (I was to be ready by 1 PM). Jim was already there directing us to the location behind the school in - of all things - an all steel building. OH! Anyway, we managed to set up the 30' antenna pole with a Homebrew "J" pole atop donated by Earl Couch, WB5ZBA. It was near a window so the little 40' piece of coax reached in fine order. We just had time to carry in the gear for demonstrating such as HF rigs, VHF rigs, SWR meters, power supplies, touch-tone pad, some Homebrew oscillators built by Jim, KA5FBC, little flashing lights that Jim wore on his shirt which caused a great amount of curiosity, Hi. Oh yes, I lugged in a heavy duty truck battery to demonstrate emergency power.

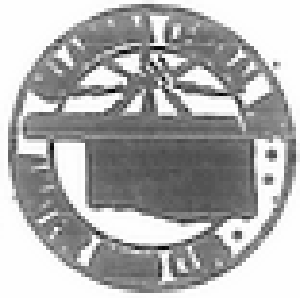
When the students started marching in I thought there would be no end to the line. All were seated on the floor as this building was not completed. After the introductions, all began to be very enjoyable. I gave a briefing on what amateur radio was, making it clear that it was not CB. Then I went into frequencies, meters, hertz, cycles, mhz, speed of light and radio waves. Asking questions as I went along, I was pleased with all the fine answers I received, especially from some of the younger students.

We let the children ask questions on the air from our County Civil Defense Director, Ron McCalip, KA5CAY, from the EOC room in the City Hall basement in Shawnee. Ron made a very enlightening talk in regard to what his office did, the types of CD, police, sheriff, and other communications were at his finger tips. He was naturally flooded with questions for about 15 minutes after which we had to let him rest. Hi!

All in all, it was a very enlightening and enjoyable affair that we all were very happy about. We dismantled and finished up about 3 PM. We loaded up all the paraphernalia; 8' ladder and two 15' poles on the side of the camper and all the gear inside. (I wonder what people thought that type of "fishing" pole was for?) BOB, K5LZF.....

FROM THE OLD SCRATCH-BUILDER'S BENCH: How many times have you thrown away an in-line fuse holder because the little button that rests against the fuse has broken off? Did you ever wish someone would come up with a way to install an in-line fuse holder in any line you might have without having a splice at each end of the fuse? If you will look at a short 1/8" pop rivit, you will see that the nail-like stem will come out leaving just the rivit with a hole through it. If you put this rivit on the end of the fused lead and solder the flat end and dress it down it will look and work like a factory job.





Club
NEWS
91407
The Oklahoma Radio Club

EDITOR: Joe Buswell, K5JB 732-0676

MINUTES OF NOVEMBER MEETING

MEETING WAS CALLED TO ORDER AT 8 P. M. BY VICE PRESIDENT, CLARENCE, K5YAQ, WITH 13 MEMBERS AND GUESTS PRESENT. JERRY, KA5DCM, WAS EXCUSED TO RESCUE N5BEQ WHO CALLED IN WITH A DEAD BATTERY.

NOMINATING COMMITTEE CONSISTING OF WA5JGU, N5BEQ, W5HXL AND W5KE WAS SELECTED TO PREPARE A LIST OF CANDIDATES FOR CLUB OFFICE. ELECTION WILL BE HELD IN JANUARY.

IT WAS MOVED AND PASSED THAT GIFTS FOR YOUNGSTERS BE BROUGHT TO THE DECEMBER MEETING. EACH GIFT WILL BE MARKED TO INDICATE SEX AND APPROXIMATE AGE OF THE INTENDED RECIPIENT. MEMBERS WILL BRING SNACKS AND DESSERTS FOR THE CHRISTMAS MUNCH. WA5JGU IS BRINGING THE PUNCH.

STEVE, W5VCJ, REPORTED ON LATEST ACTIVITY ON SIX METER BAND. THE BAND HAS BEEN HOT AS A PISTOL WITH S-9 BACKSCATTER FROM MEXICO CITY AT THE SAME TIME HAWAII IS ROLLING IN. HE SAID IT WAS AS GOOD AS THE OPENINGS DURING THE SUN SPOT PEAK OF 1958.

BOB, W5HXL, GAVE A DIGEST OF A PRESENTATION THAT WAS MADE AT A RECENT IEEE MEETING BY GENERAL ELECTRIC REPRESENTATIVES ON GE MARC V, THE 800 MHZ "TRUNK LINE" COMMUNITY REPEATER SYSTEM THAT USES MULTIPLE REPEATERS AND SMART TRANSCEIVERS TO AUTOMATICALLY JUMP AROUND IN FREQUENCY TO INCREASE REPEATER UTILIZATION AND EXPAND FEATURES AVAILABLE TO USERS. MEETING WAS AJOURNED AT 9:03. JOE, K5JB, SEC'Y

UNSCIENTIFIC ANTENNA EXPERIMENTS - THE FALL FOLIAGE TOUR

FOR THOSE OF YOU WHO HAVE BEEN FOLLOWING THE WA5TRS/K5JB ANNUAL TREK TO WOLF CREEK PASS COLORADO, IT SHOULD COME AS NO SUPRISE TO HEAR ME ADMIT THAT IT HAS DEGENERATED TO A REAL GOOFING OFF TRIP. TEN OR TWELVE YEARS AGO, I USED TO GET ON THE AIR LATE AT NIGHT AFTER LONG DAYS OF SERIOUS DEER AND ELK HUNTING, AND QRT EARLY TO GET UP AT THE CRACK OF DAWN TO HEAD FOR THE HILLS. THIS YEAR, WITH THE HELP OF FRED, W5NL, I GOT ON THE AIR LATE AT NIGHT AFTER A DAY OF SERIOUS ANTENNA BUILDING, STAYED ON LATE, AND GOT UP EARLY TO GET BACK ON THE AIR. WHILE FRED WAS CERTAINLY A FACTOR THAT KEPT THE RIG HOT 20 HOURS OUT OF THE AVAILABLE 24, A LOOK THROUGH THE LOGBOOK REVEALS SOME OF THE REAL CULPRITS. IN REVERSE ORDER IN THE LOG, THERE IS WB5TKG, N5MS, K5GBN, K5CXP, WA5YFI, WA5MLT, WB5BTT, W5SWW, WA5EAI, AB5Z, WD5DYI, WB5FZD, A15Y, W5HXL, WD5IRB, KB5EK, AC5C, WD5ETB, WA5OUV, WB5YWO, W5ZDI, W5MGP, N5CJA, W5LOW, WA5VAQ, W5PDH, W5OZE, WB5OLO, N5AUP, AND WB5DGT. THESE ARE ONLY THE OKLAHOMANS FRED AND I TALKED WITH. ONE WEEK OF OPERATION LIKE THIS MAKES ONE APPRECIATE HOW MUCH FUN AMATEUR RADIO CAN BE.

THE VERY FIRST ANTENNA INSTALLED TURNED OUT TO BE THE ONLY TURKEY PUT UP DURING THE WEEK. AFTER MUCH STUDY, IT WAS DETERMINED THAT STAINLESS STEEL MAKES STINKO ANTENNA WIRE. THE STORY GOES LIKE THIS. A 'FRIEND' WHO HAS SINCE DEPARTED THE AREA, WAS CLEANING OUT HIS SHACK AND GAVE ME A BIG SPOOL OF GI SURPLUS 'ANTENNA WIRE'. NOT BEING ONE TO LOOK A GIFT WIRE IN THE STRAND, I PACKED IT AWAY FOR AN APPROPRIATE TIME. IT WAS RATHER BRIGHT FINISH BUT I ASSUMED IT WAS SOMEHOW TREATED TO RETARD CORROSION AND PLATED TO MAKE IT GOOD AND CONDUCTIVE. I DECIDED TO AVOID SOLDERING IT TO KEEP FROM CREATING STRESS RISERS. CRIMPED LOOPS ON THE ENDS WOULD MAKE A NEAT SIGHT, I REASONED. AFTER MEASURING OFF TWO QUARTER WAVELENGTHS, MINUS 5%, I DRAGGED IT OUTSIDE AND SUSPENDED IT BETWEEN TWO TREES, 40 FEET OFF THE GROUND. FIRST CONTACT WAS A REAL DISAPPOINTMENT. A STATION I WAS RECEIVING S-9 COULD HARDLY HEAR ME. IT WAS GETTING DARK SO DOWN CAME COAX, CENTER INSULATOR WIRE AND ALL, AND UP WENT A HY-GAIN

TAPE DIPOLE, SPLICED COAX, T-NETWORK TRANSMISSION LINE TUNER AND TWO SWR BRIDGES. ONE SWR BRIDGE WAS TO SEE WHAT THE T-NETWORK WAS DOING AND THE OTHER ONE WAS USED TO SPLICE THE TWO PIECES OF COAX TOGETHER. RESULTS WERE GOOD. I GOT OUT AN EMERGENCY MESSAGE TO FRED, W5NL, WHO HAD NOT LEFT OKC YET, TO BRING COAX AND CONNECTORS. I HAD ENOUGH STUFF TO PUT UP THE OLD TRIED AND PROVEN ANTENNA BUT I WAS IN THE MOOD TO DO SOME EXPERIMENTATION.

A CHECK WITH AN OHMMETER, AND THEN A MAGNET, FOUND THE PROBABLE CAUSE OF THE POOR PERFORMANCE OF THE FIRST ANTENNA. THE OHMMETER SHOWED 2 OHMS IN A TEN FOOT SECTION OF THE 'ANTENNA' WIRE AND THE MAGNET SHOWED IT MILDLY MAGNETIC. MY FIRST WILD GUESS WAS THAT IT WAS 400 SERIES STAINLESS STEEL AND THAT IT PROBABLY WOULD BE A BIT MORE WILD A GUESS BUT IT PROBABLY HAD ABOUT 2 OHMS PER FOOT RF RESISTANCE AT 3.5 MHZ, AND GETTING WORSE AS THE FREQUENCY WENT UP. IT WOULD MAKE A BETTER DUMMY LOAD THAN A LIGHT BULB, ANYWAY.

ONCE FRED AND I WERE WELL UNDER WAY, WE HAD FOUR ANTENNAS WITH TWO MATCH BOXES HOOKED TO A COAX SWITCH. THERE WAS THE TAPE DIPOLE, HALF WAVE ON 75 METERS, 40 FEET OFF THE GROUND. HANGING FROM THE FRONT PORCH, THERE WERE TWO ANTENNAS, BALUN CONNECTED, INVERTED VEE CONFIGURATION, WITH THE CENTER ABOUT 25 FEET UP. A TWENTY METER DIPOLE WAS SUSPENDED ABOUT 30 FEET UP. THE LAST ONE WAS PERHAPS THE MOST INTERESTING TO US. IT WAS FIRST AN END FED HALF WAVE ON 75 METERS IN KIND OF A LOPSIDED INVERTED VEE CONFIGURATION. THERE WAS NO PARTICULAR ADVANTAGE TO IT EXCEPT FOR ZERO COAX, THEREFORE NO SWR TO MEASURE AND NO LOSS IN THE COAX. IT WAS EQUIVALENT TO THE OTHER TWO 75 METER ANTENNAS AND WHEN TUNED ON HARMONICS, WAS EQUIVALENT TO THE 75 METER DIPOLE WITHOUT THE BALUN. I MUST EXPLAIN THAT THE REASON FOR THE BALUN IN ONE OF THE ANTENNAS IS THAT I PUT IT TOGETHER ONE YEAR TO TRY IT OUT AND IT MADE SUCH A CUTE CENTER INSULATOR, AND LOOKED SO WELL ENGINEERED, THAT I HATED TO DISMANTLE IT. I DON'T THINK IT HURTS ANYTHING BUT I HAVE DECIDED NOT TO OVERLY STRESS IT WITH THE T-NETWORK AND VOLTAGE FEED THE ANTENNAS, ON 20 METERS, FOR EXAMPLE.

AFTER ONE DAY OF PLAYING WITH THE END FED WIRE, WE DECIDED TO STRING IT VERTICALLY. SINCE THE TREES WERE NOT QUITE HIGH ENOUGH, SOME WIRE HAD TO GO. WHAT BETTER PLACE TO PUT SOME OF IT TO USE THAN TO MAKE A CAPACITIVE TOP HAT? I WOULD DO ANYTHING TO KEEP FROM CURRENT FEEDING THAT WIRE, BECAUSE WE DIDN'T HAVE A GROUND, THAT'S WHY. A LITTLE TEE WAS MADE FOR THE TOP WITH TWO 8 1/2 FOOT ARMS AND THE THING WAS STRUNG 90 FEET UP BY LINES STRUNG BETWEEN TWO TREES. YOU WOULDN'T WANT TO KNOW HOW WE CLIMBED THOSE TREES WOULD YOU? A NUMBER OF PEOPLE DID ASK THAT QUESTION AND I WAS TEMPTED TO TELL'EM HOW FRED HID THE RUM BOTTLE UP THERE AND HOW I DRAGGED A LINE WITH ME TO LET THE THING DOWN SO IT WOULDN'T BREAK IF I FELL. INSTEAD I MADE UP A STORY ABOUT SLINGSHOTS, 3/4 OZ FISHING SINKERS, 12 POUND TEST LINE, AND UNBELIEVABLE STUFF LIKE THAT.

ONCE THE VERTICAL WAS UP, WE STARTED MAKING ALL KINDS OF COMPARISONS WITH THE HORIZONTAL ANTENNAS. IT GENERALLY WORKED THE SAME AS THE HORIZONTAL ANTENNAS ON 75 METERS. SOMETIMES IT HAD A SLIGHT EDGE AND SOMETIMES IT WAS A LITTLE LESS EFFECTIVE. STAN, W5YFI, A HARD SHELL VERTICAL USER CLAIMED THE SIGNAL WAS BETTER WITH THE VERTICAL BUT I REALLY COULDN'T TELL ANY DIFFERENCE ON THE RECEIVING OF OKLA. CITY SIGNALS. SUCH A LONG PIECE OF WIRE ELIMINATED MY OBJECTION TO VERTICALS, THAT IS, DIFFICULTY IN GETTING AN EFFICIENT FEED WITHOUT 120 GROUND RADIALS. I HAVE TO ADMIT THAT THERE WERE A FEW STATIONS THAT MAY HAVE BEEN STRONGER ON THE VERTICAL BECAUSE OF BETTER VERTICAL RADIATION PATTERN. THE HALF WAVE VERTICAL WITH THE CURRENT LOOP 1/2 WAVE ABOVE GROUND SHOULD HAVE A MUCH LOWER RADIATION ANGLE THAN THE HORIZONTAL LOCATED 1/6 WAVELENGTH ABOVE GROUND. GROUND ABSORPTION FROM THE LATTER WAS PROBABLY ALSO SIGNIFICANT.

ONE NO-NO THAT WE WERE GUILTY OF COMMITTING WAS RUNNING COAX AS A TUNED LINE. SWR OF THE RG-11 FEEDING THE TAPE DIPOLE WAS PROBABLY AROUND 50 TO ONE WHEN WE USED THE ANTENNA ON FORTY AND TWENTY METERS.

I DIDN'T TEST THE STUFF ON FORTY OR TWENTY METERS BUT ON 75 METERS, 110 WATTS IN YIELDED 90 WATTS OUT SO THE LOSS WAS WHAT ONE WOULD EXPECT FROM 15 OR 20 YEAR OLD COAX, 180 FEET LONG, BY THE WAY. I DIDN'T CHECK THE CURVES BUT ADDITIONAL DIELECTRIC LOSSES WERE PROBABLY IN THE NEIGHBORHOOD OF 10 DB BUT WE COULDN'T TELL THAT MUCH DIFFERENCE WHEN SWITCHING BETWEEN THAT ANTENNA AND RESONANT ANTENNAS ON 40 AND 20. OF COURSE, THERE WAS NO GUARANTEE THAT OUR REFERENCE ANTENNAS WERE ALL THAT GOOD EITHER, HI. ON TWENTY, THE TWO WAVE-LENGTH VERTICAL HAD A SLIGHT EDGE WHILE WORKING OH1DA. FIGURE THE LOBES OUT ON THAT ONE. BY THE WAY, TRUE TO FORM, POWER LINE NOISE WAS SLIGHTLY STRONGER ON THE VERTICAL.

THE ONLY CONCLUSION WE DREW FROM ALL THIS WAS THAT AS LONG AS YOU GET SOME KIND OF A WIRE STRUNG UP OUTDOORS YOU CAN WORK 'EM. I SURE WISH I HAD SOME OF THOSE 100 FOOT ANTENNA SUPPORTS AROUND MY HOUSE SO I COULD HAVE A SELECTION OF ANTENNAS TO CHOOSE FROM. IF IT WAS GOING TO BE A PERMANENT INSTALLATION, I WOULD STRING WIRE BEAMS TO GET A FEW DB OF GAIN. I LEFT THE LINE STRUNG BETWEEN THE TREES THAT WERE SUPPORTING OUR VERTICAL. IF THE WINTER DOESN'T TAKE IT DOWN, I'LL STRING THE CENTER OF AN INVERTED VEE UP THERE NEXT TIME. THAT SHOULD BE INTERESTING.

ONE OTHER EXPERIMENT RUN WAS ON THE TRANSMISSION LINE TUNER. I HAD RECONFIGURED IT FROM THE MC COY TRANSMATCH TO A TEE CONFIGURATION. TWO CAPACITORS OF 320 PF AND 200 PF ARE IN THE SERIES LEGS AND A ROLLER INDUCTOR OF 26 UH IS IN SHUNT. I NOTICED THAT MOST OF THE TIME THE CAPACITOR ON THE TRANSMISSION LINE SIDE OF THE THING WAS FULLY MESHERD. MAYBE 20% OF THE TIME I WOULD HAVE THE INPUT CAPACITOR FULLY MESHERD AND TUNE THE LINE WITH THE INDUCTOR AND THE OUTPUT CAPACITOR. I REASONED THAT MAYBE ONE CAPACITOR WOULD BE SUFFICIENT, REDUCING THE SIZE OF THE BOX BY ONE THIRD. INPUT AND OUTPUT LEADS COULD BE EXCHANGED FOR THE 20 PERCENTILE CASE. WITH W5HXL'S HELP I LASHED SUCH A TUNER TOGETHER AND WITH MR H. PACKARD'S HELP FOUND THAT MY REASONING WAS NO GOOD. WELL, IT IS A LITTLE EARLY TO TELL BUT I THINK WE ARE WELL ON THE WAY TOWARD HAVING A MATCH BOX MORE NEARLY THE SIZE OF A MODERN TRANSCEIVER, THAT WILL HANDLE QRO AND WILL MATCH A WILD RANGE OF COMPLEX IMPEDANCES. MAYBE NEXT MONTH WE CAN GET INTO THAT.

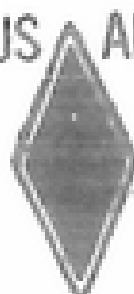
ONE LAST EXPERIMENT WORTHY OF MENTION WAS RUN BY FRED, W5NL. ONE OF OUR PARTY, TEHRAN, NO RELATION TO THE MIDDLE EASTERN CITY, EXPRESSED AN INTEREST IN FRED'S ELECTRONIC KEYS. FRED IN THE TRUE MISSIONARY SPIRIT, BEGAN TEACHING TEHRAN, PRONOUNCED TAREN, THE CODE. BEFORE THE EVENING WAS OVER, TEHRAN KNEW 22 OUT OF THE 26 LETTERS OF THE ALPHABET. THE NEXT DAY I SPOT CHECKED HIM ON SEVERAL LETTERS AND WAS SUPRISED HOW MANY HE KNEW. I HAVE NO DOUBT THAT FRED COULD HAVE WORKED HIM OVER ONE MORE EVENING AND HE COULD HAVE PASSED THE 5 WPM CODE TEST. HERE IS A GUY WHO DIDN'T EVEN CARE IF HE LEARNED THE CODE OR NOT. EITHER WE STUMBLED ACROSS A GENIUS, FRED IS A TERRIFIC TEACHER, OR THE CODE ISN'T SO HARD TO LEARN AFTER ALL.

WITH FRED'S HELP, THE ANNUAL FALL FOLIAGE TOUR IS EVOLVING INTO THE WOLF CREEK PASS HAMFEST. NO MEETINGS, NO PRIZES AND NO CONTESTS. BOB, THE OWNER OF THE CABIN MADE A DEAL WITH ME ONE TIME. HE SAID IF I GOT MY PILOT LICENSE, HE WOULD GET HIS AMATEUR LICENSE. I'LL HAVE TO KEEP GENTLE PRESSURE ON HIM TO PRODUCE. THEN WE MIGHT BE ABLE TO JUSTIFY MORE PERMANENT ANTENNA INSTALLATIONS, MAYBE EVEN A MOUNTAIN TOP REPEATER SO WE CAN TALK TO THE LOCALS A COUPLE OF HUNDRED MILES AWAY. JOE, K5JB

RUMORS HEARD

HAVE YOU HEARD THAT THE FCC IS THINKING OF OPENING A FIELD OFFICE IN TULSA? SOUNDS LIKE A GOOD IDEA TO ME, CLOSE BUT NOT 100 CLOSE. TEMPO HAS COME OUT WITH A 440 MHZ TALKIE, SYNTHESIZED YET, ACCORDING TO AN AD IN 73, 30 KHZ CHANNEL SPACING? ? ? TOM, W5OZE, HAS A CROAKING CLOCK. INSTEAD OF "BUZZZZZ" IT WAKES HIM UP WITH "GET UP! GET OUT OF BED YOU TURKEY...AND ALL LIKE THAT" JOE, K5JB

ALTUS AREA



AMATEUR RADIO
ASSOCIATION

EDITOR: Mike Schenkke, W5VXU 482-1797

The Altus Area Amateur Radio Association held its regular monthly meeting Thursday, November 13, at 7.30PM at the North Main Fire Station. In attendance were Loren WA5CBF President, Mike W5VXU Secretary, Dwight WB5KRH, Elmo Combs awaiting his Novice license, Major KI5P and Dennis KB2FW. Attendance was low but that meant that everyone there got more than his share of the donuts.

Although no major decisions were made this evening, a great many subjects were covered, some in great detail. Dwight showed off his new toy, a UHF transmitter which is to be used in the linking of the various repeaters around the area. This project has been his baby for quite some time and seems to be gaining speed towards a successful conclusion. The unit he brought is a commercially available piece of equipment costing something around \$80.00 and will be used to link Altus with Cement in the near future as one link towards OKC.

Dwight and Loren told the group about a recent communications assist furnished by several of the local hams. The City Recreation Department sponsored an automobile rally and six of the hams furnished along-the-route communications for the race officials supplying information on location of racers, course conditions and, of course, providing immediate communications in case of accident or trouble. The race was declared a success and we are looking forward to many more in the future. Those participating were WB5KRH, WB5MJS, W5NRQ, WA5CBF, WB5VUM and W5VXU.

Major reported that the Novice class has now completed formal class sessions with 7 completing the code test, 3 completing the written exam and the remaining 4 awaiting FCC action on their applications. There are three more students who indicated they still wanted to continue on to pass their code requirements and Mike will test them at his home QTH. As soon as they get done, applications will be processed and this area should end up with ten more Novices in the very near future it looks like.

Also brought up for consideration was that this meeting was to have picked a slate of officers for next year but due to the low participation everyone was asked to keep this subject in mind and all members are urged to come to the December meeting. Fair warning was given that if you don't attend you just might get picked for a long term job without having volunteered. Seriously, we will need some names to be brought to the foreground to fill vacancies for President and Secretary-Treasurer for next year, so give it some serious thought.

The next monthly meeting will be held December 11 at the usual time and place.

WANTED: Equipment suitable for use by new Novice operators. Do you have an older rig just sitting around not being used and gathering dust? Put a price tag on it and make it available to the dozen or so new Novices in the area. Pass the word on the air or at the next meeting if you have such items. Contact Mike, W5VXU or Major, KI5P, via altus repeater.

FOR SALE: HT-220 @M transceiver, 1.8 watts, complete with battery, charger, pullup antenna and rubber ducky. Set up for 19/79 and 28/88. For information contact Loren, WA5CBF, via Altus repeater.

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AMATEUR RADIO EMERGENCY SERVICE



Critiquing our last SET, led to a consensus that a better understanding of the functions and responsibilities of the different organizations involved in disaster work would assist us in providing better communication service to assist them. Jack Muse, WB5ZKZ, has set up the following training orientation, and everyone is urged to attend.

JANUARY 22, 1981 7:00PM "DISASTER ORIENTATION" American Red Cross building - come to back door.

JANUARY 29, 1981 7:30PM "STATE CIVIL DEFENSE", EOC at the State Capital complex. Meet at the West door of the Will Rogers Building, promptly at 7:30, so we can go in as a group.

FEBRUARY 5, 1981 "OKLAHOMA CITY FIRE DEPARTMENT" 7:30PM at the Central Fire Station, 820 N W 5.

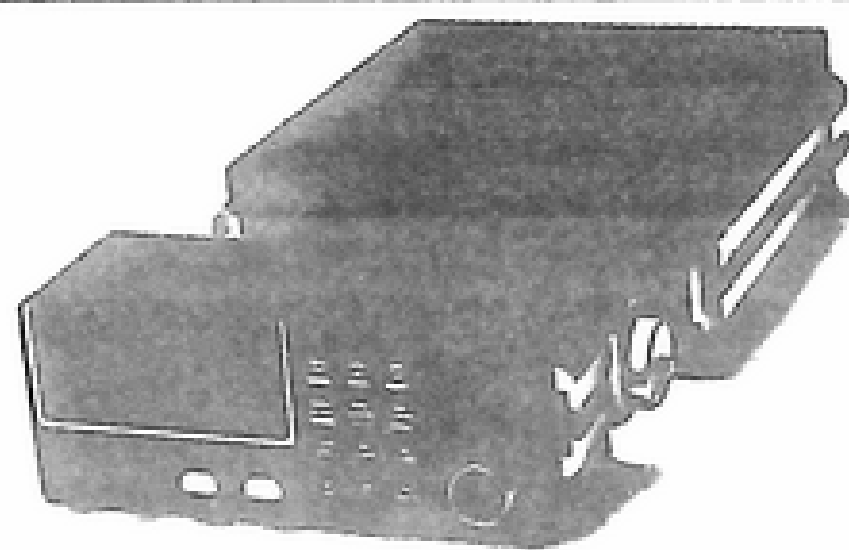
FEBRUARY 12, 1981 "OKLAHOMA COUNTY CIVIL DEFENSE" 7:30PM

FEBRUARY 19, 1981 "DAMAGE ASSESMENT" 7:30PM American Red Cross.

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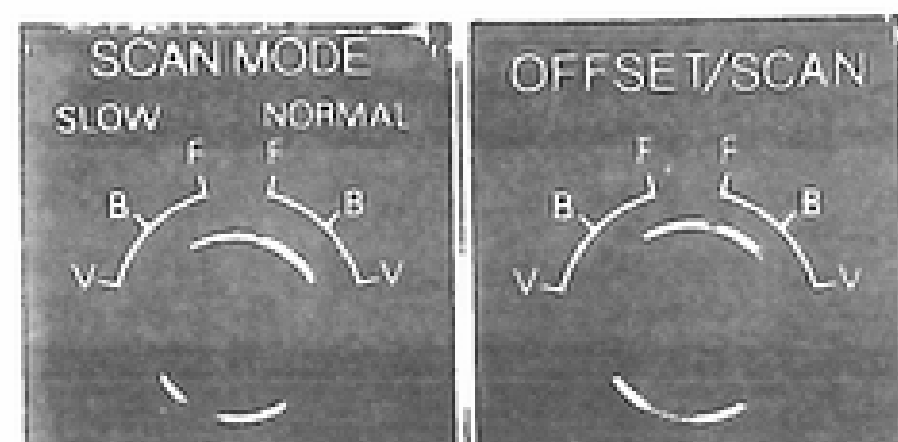
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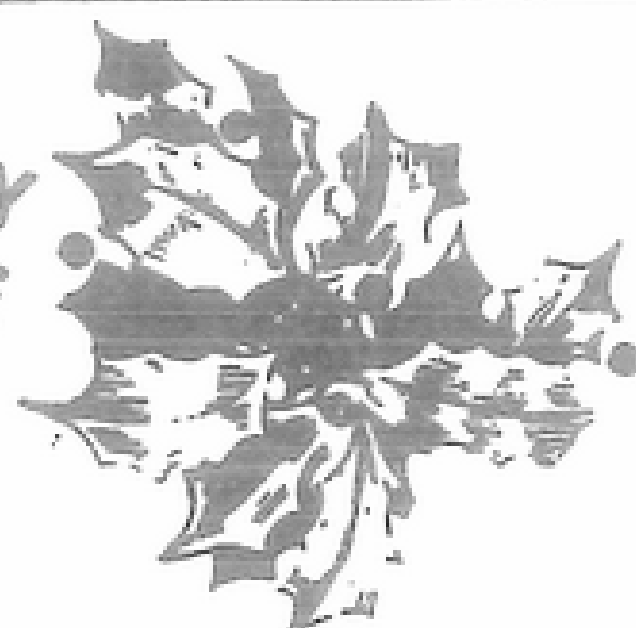
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The November meeting was hosted by K5VRL Jim, and his wife Helen. The club met at Cinders on northwest highway, for a delicious meal. There were twenty one members, and one very welcomed guest N5BEQ Jim Buswell, welcome back Jim.

After lunch we drove up north may to the Nichol Hills area, to Data-Com Inc. Charles Riney, employee of Data-Com Inc took us on a complete tour of the computer operation. From the punching of cards through print outs, and informations that could be programed into computers. Answering lots of questions on the way, one thing that amazed me, having a small computer at our place of business was thier system is so programed if an unauthorized person tries to get information out of the computer it simply tells them they are unauthorized persons. Really there was no end to it. It reminded me of a story I heard a few years back when the large tuoe type computers came out. A salesman went into a car dealership, walking into the shop he said, my what new equipment it sure looks nice. (dealer) If you think that is something come lets go up stairs. (salesman) My goodness what is that all lined across the wall?. (dealer) That is a max computer, it will tell you any thing you want to know it will not and can not tell a lie. (salesman) I don't believe that. (dealer) Okay you just ask any thing and I will prove it to you. We just put your question in this end and go down to the other end for your answer. (salesman) Question, what is my father doing. (computer) Your father is down in Florida fishing. (salesman) See it told a lie my father is dead. (dealer) No it did not lie just ask another question and I will prove it. (salesman) Question what is my mother's husband doing? (computer) Your mother's husband is dead, but your father is still in Florida fishing.

An ~~import~~ important meeting coming up the 7th of December. It is time to elect new officers for 1981, pay dues and a few other things to be taken care of. If any of you did not get the postal inspection card filled out and returned you must do so. I will try to have some extra ones at the December meeting. We will eat and have the meeting at the Country Fare, any one who does not know where it is, coming from the east it is at highway 33 and south Noble across west of the Mobil service station. From the south, west, and north when you come to the 4 way stop turn east on 33 highway, about 4 blocks North side of highway. On lunch menu there will be turkey and dressing along with other choices, we have set the time to start the line at 1:30 p.m. The cost will be \$4.50 with tea or coffee included. Visitors and any one interested in our club are welcome. A special invitation to Mrs. Perry Jones.

I also need a count of the number of people that will eat lunch for the resturant to prepare for. Checking into the night you can give your count or have a station do it for you. W5JEB Father Joe had the opportunity and privilege to take a tour of the Holy Land taking a group of slides, he is bringing about forty slides to the meeting to give a program for the meeting.

Not being able to type, spell, or ~~write~~ write my type writer had to start sticking due to like of use I guess has most certainly not been a joke. I put a little skunk oil or some kind of lubricant on it and it has finally started moving again.

I haven't been on the radio much lately and not doing any signal sapping, I do not know much news. Our good friend WB5PFW Ralph and Geneva flew to Kansas City visiting son and family. Their son took Ralph to the world series to see the phillies win, Ralph said it was a life long ~~ambition~~ ambition to attend a world series game, they had a ball. WA5PFK



The November meeting of the Choctaw Amateur Radio Club was called to order by AB5H at 7 P.M., November 10, 1980 at the Choctaw City Hall.

The minutes of last month's meeting were accepted as read. KA5ALO gave the Treasurer's Report and WD5EVP gave the CORA Report. Members present were given proper forms to fill out in order to receive C & E.

Election of Officers had to be postponed until the December Meeting due to lack of attendance. The Christmas Dinner is to be held December 8 at 7 P.M. at the Old Germany Restaurant, SE 29 and Indian Meridian. Facilities are limited to 50 people. Members are reminded to bring toys for needy children as has been done in the past.

After a short break for cookies and coffee we were pleased to have WD5BNT who presented a program on computers and their use in amateur radio. Those not in attendance missed a very interesting program. See you all at the Christmas Party.

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WSPAA

EDITOR: Bob Graham, WB5NSV 677-8685

MINUTES OF THE NOVEMBER MEETING OF THE ACARC

The meeting started at 8:02 PM with a round of self introductions. There were 38 members and guests present.

CORA reported two major items of interest. They applied for permission to hold the West Gulf ARRL convention to go along with Ham Holiday '81. Also they reported that the Red Cross will hold a Health Fair in Oklahoma City next March or April. They will have approximately 50 booths across the city. They will be in need of some amateur radio operators for communications. Our club voted to support the Red Cross operation.

It was reported by President Bob Pace, WA5CJG, that the repeater is still up and working.

Our annual Christmas dinner will be held at American Legion Post 12 on 50th street - 2 blocks west of Macarthur on the North side of the street. Plenty of parking for all. Price will be \$6.00 each. Time will be at 7:00PM on Dec. 5, Friday nite. This will be a very fine Ham Dinner.

The program was a film entitled Universe, provided by Larry Bugg, WB5AAY. Thanks Larry.

Submitted by Bill Oliver, K5KDR for the secretary

I would like to take this opportunity to thank Bill Oliver, K5KDR, for filling in for me at the last ACARC meeting. Bill got drafted at the last minute to take the minutes of the meeting in my absence. Thanks again Bill.

Bob Graham, WB5NSV

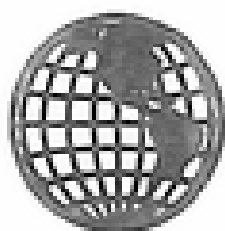
RANDOM WORDS FROM THE PRESIDENT:

WELL HERE IT IS TIME TO PUT THE C & E TOGETHER AGAIN AND NOT MUCH NEWS TO WRITE ABOUT, WE DID HAVE A GOOD TURN OUT FOR THE NOVEMBER MEETING OF ACARC. WE HAD SOME 38 PEOPLE PRESENT, AND THE FILM WAS VERY INTERESTING, I WOULD LIKE TO THANK LARRY WB5AAY FOR GETTING THE FILM AND BRINGING IT OUT FOR THE CLUB TO SEE.

THE DECEMBER MEETING OF ACARC WILL BE OUR CHRISTMAS DINNER IT WILL TAKE PLACE DECEMBER THE 5 TH AT THE AMERICAN LEGION HALL JUST TWO BLOCKS WEST ON 50TH STREET OFF OF MACARTHUR, THERE WILL BE PLENTY OF GOOD FOOD (HAM) AND IT WILL COST YOU ONLY \$6.00 A HEAD SO COME ON OUT AND JOIN US FOR A GOOD TIME...

YOU KNOW THE NEXT C & E YOU GET AFTERB THIS ONE WILL BE IN LATE DECEMBER SO I WOULD LIKE TO TAKE THIS OPERTUNITY TO WISH EACH OF YOU A VERY MERRY CHRISTMAS AND A HAPPY NEW YEAR, AND IN THE NEW YEAR WOULD EACH OF YOU MAKE YOUR THOUGHTS KNOWN THROUGH THE C & E....

73, BOB PACE, WA5CJG



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RADIO SOCIETY

147.72/147.12

As I start this next to the next to the last column of this administration I feel a certain shortage of news to print so I think we will let those who missed the last meeting share in the fun (trauma) of our program.

As for the business meeting itself it was fairly routine. The treasurer's report indicates a cash balance of about \$279. That should allow for a few repeater repairs without Uncle Sam moving in to ask us to share our ill gotten gains.

The CORA report was received with mixed enthusiasum. A proposal to support an OKC group desiring communications for a city wide Health Fair met with a pretty firmly expressed lack of support on the grounds that it was not of an emergency nature; did not involve Civil Defense; and Ma Bell's land lines would be available at all locations involved. News that Ham Holiday was bidding for the W5 regional bash was well received.

President Ken proposed that the club officers, committee chairmen and the past president serve as an executive committee to preview club business matters and recommend action to the membership. The proposal was accepted. If you fit into one of the above classifications you can expect a bid to come an hour early to the next meeting.

Oscar Staudt won the door prize, a 1981 ARRL Handbook. And Bill McMullin was back among us; welcome back Bill; we missed you. Speaking of missing members--what ever happened to past pres. Howard Wise, or the irrepressible Bob Shaw?? Or for that matter what ever happened to a list of about 15 people whom we haven't seen for some time. We need your support folks. Next month should be nominating time for new officers for our 1981 year and some of you probably should be there to protect yourselves if for no other reason. Some one is liable to decide that you would make a good High Muckety-muck In Charge of Something-or-other.

Hardly a month goes by without EARS members finding some civic activity in which to be involved. On November first it was the Shriners Membership Initiation Parade held in Edmond. Surveillance for the event was ably organized by Bob Janda who also served as net control. The following participants comprise this month's Honor Roll:

Bob Janda, KA5AFN, Net Control

Al Boord,	WA5GOI	Bob Shaw,	WA5BQX
Oscar Staudt,	WB5GCX	Bob McCoy,	N5BUJ
J. D. Keeling,	WA5ZGN	Dave Dierker,	WB5RLR
Ken Stepp,	WD5HXX	Clarence Dollmeyer,	KB5RR

That noon the same day we ran the regular "first Saturday of the month" siren tests. Ken Stepp served as coordinator and net control as usual but things were somewhat different this time. Edmond now has a total of 12 sirens in service with four of the locations being new sites to improve the coverage. In the past we have been covering six to eight locations with as many people. This time we covered 12 locations with six people. That is not too tough on those who have a pair of the outlying locations. However, when your beat includes two in-town locations, and you hit every red light in town when going from one to the other, you do have a problem. This is one activity where there are lots of opportunities to serve. So in case you are wondering where you can fit in, call Ken Stepp. He needs YOUR help in this and lots of other activities.

Our next meeting comes after Turkey Day and we as members of EARS have many things to be thankful for in an organizational sense. We have experienced a very strong healthy growth; our activities on behalf of our community have been many and our successes notable; the fellowship has enhanced all our lives; and those who have given of themselves have gained much in the way of that intangible peace and strength that comes with service to one's fellow man.

EARS

Our next meeting comes in the midst of that season of mad scramble to get ready for the Christmas Season and it is time for EARS members to begin to survey thier junk box and decide which of the many goodies therein would look nice gracing someone elses junk box. After you have selected your item, wrap it up in material suitable for the occasion and bring it to the meeting to exchange with someone who is going to do the same thing to you. You never know what may happen. The +6v to -6v converter I unwrapped last year wound up being donated to a 12v battery to 11.6v pulse DC charger project out at Bill Wright's shack.

OK -- Here we go with your chance to participate in this months program. Bill Wright brought us the following Quiz (bless his pointed head).

ARRL ANTENNA QUIZ

Choose the answer which is *most* correct.

1. A 1-to-1 balun is used between the coaxial feed line and the antenna:

- A. To provide a match between the line and the antenna.
- B. To stop TVI.
- C. To prevent feed-line radiation.
- D. To provide a balanced feed from an unbalanced line.
- E. Because the manufacturer says they are great!

2. A 1-to-1 standing-wave ratio is desirable on your coax feed line because:

- A. It reduces or eliminates TVI.
- B. It reduces or eliminates Hi-Fi interference.
- C. It reduces losses in the transmission line.
- D. It increases the gain in the antenna.
- E. It permits the best transfer of power from the feed line to the antenna.

3. You have a dipole antenna and want to improve the strength of your 100-watt signal. Which will do the best all-around job?

- A. Raise your present antenna 50 feet.
- B. Increase your power to 250 watts.
- C. Use bigger coax.
- D. Put up a 2-element rotatable beam with 4.5 dB gain.
- E. Get everybody else to reduce power to 100 watts.

4. Which antenna has the most gain?

- A. An extended double Zepp.
- B. A single quad loop.
- C. A single delta loop.
- D. A half-wave dipole.
- E. A folded dipole.

5. The primary controlling factor in determining the vertical angle of radiation from a horizontally polarized beam antenna is:

- A. The method and amount of phasing between the antenna elements.
- B. The number of elements used.
- C. The stacking of antennas.
- D. The method of feed and matching.
- E. The height above ground.

6. Your power bridge in the feed line indicates 80 watts forward power and 40 watts reflected power. This means that:

- A. Your SWR is 2 to 1.
- B. You have 80 watts going into the antenna.
- C. You have 40 watts going into the antenna.
- D. This is a harmful condition for your final amplifier.
- E. You'd better go to the Citizens Band.

7. You have an antenna of 70.7 ohms overall impedance, fed with 50-ohm line. This antenna has a 50-ohm radiation resistance plus a 50-ohm equivalent series reactance. Keeping in mind that you cannot put power into a reactance, i.e., a reactance will not accept power, the SWR on the line is:

- A. Zero.
- B. 1 to 1.
- C. 1.41 to 1.
- D. 2 to 1.
- E. 2.62 to 1.

8. In order to check your SWR with highest accuracy, you should always put the SWR instrument:

- A. Anywhere in the line.
- B. As close to the antenna as possible.
- C. One-quarter wavelength from the antenna.
- D. At any odd multiple of a quarter wavelength.
- E. One-half wavelength from the antenna, taking into account the velocity factor of the line.

EARS

How are you doing so far? If you had to requalify for your license every year, could you have passed this part of the test????? Well there were a number of us who didn't do too well but no tally was kept so your secret is safe fellas, unless of course you spread the word yourself.

9. You have a quarter-wave vertical antenna system fed with 50-ohm coax. You've been getting good results right along with three quarter-wave radial wires buried an inch or two in the ground, with an indicated SWR of 1 to 1. This past weekend you added 12 more radial wires in order to improve operation, but the SWR went up, now being 1.3 to 1. This means that:
- A. All is in order; you would expect the SWR to go up when the radials were added.
 - B. The extra radials have impaired the efficiency of the system, and you should rip them out immediately.
 - C. Your SWR indicator must be faulty, because everyone knows that 15 radials give better efficiency than three.
 - D. You'll have to come up with some kind of matching system to get the SWR back down where it was before you will see any improvement in operation.
 - E. You need to reresonate the vertical element for a 1:1 SWR.

10. You have two vertical quarter-wave antenna elements spaced a half wavelength apart. They are installed on an east-west line. You want to phase feed them to obtain a unidirectional pattern to the east. To obtain this pattern, they should be fed:
- A. In phase.
 - B. 90° out of phase, the eastern-most element leading.
 - C. 90° out of phase, the eastern-most element lagging.
 - D. 180° out of phase.
 - E. None of the above; impossible with this spacing.

Now -- lets see what's going on around town.

Ken Stepp suffered a loss in the family. Seems his S-1 rolled over and played dead a few days ago. So off to the Henry people out in California it went. Wonder of wonders -- six days later he is back on the air. It is pretty hard to be negative about that kind of service. What I cant figure out is which pony express service did he give it to. Surely our valiant men in grey at the postal service would not let a thing like that happen.

Your scribe has a new version of his home brew mini-quad up in the air after the untimely demise of the previous version. That reminds me -- my thanks to Oscar and Ken for attending an imprompto antenna party after the October meeting. No, the short life was not due to their assistance, but to my neglect in the matter of tightening a set of four cap screws which were vital to the integrity of the system. No, it doesn't work worth a d--- but we have high hopes. And besides, look at how much we are learning and how much fun we are having.

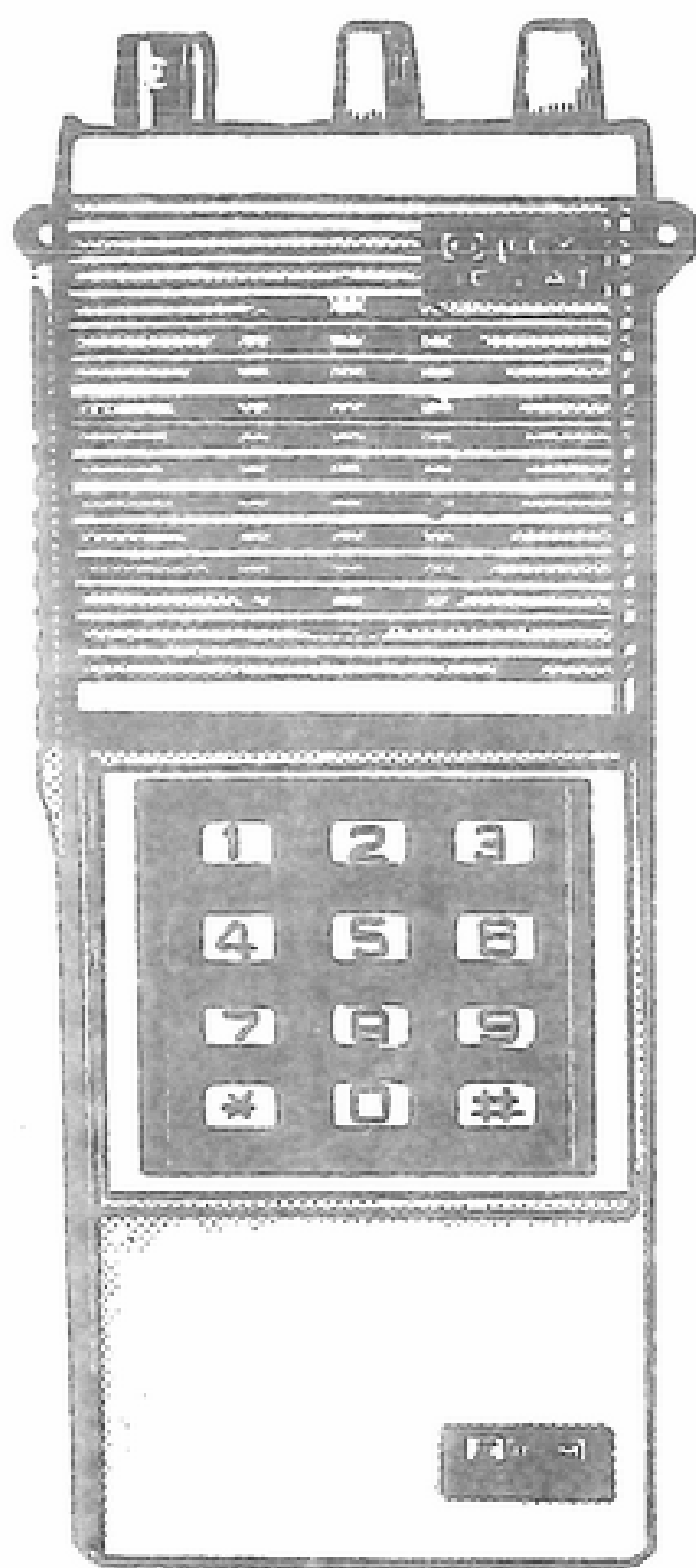
When it comes to learning, here is a system for making wooden arms for quads that seems to have merit. Start with two 3 ft x 3/4" dowels to make a 6 ft arm. Splice the dowels by drilling the ends and gluing together with a 3/8" dowel as a splicing member, but mostly as a guide and temporary joint. Then get some 3" wide glass fabric tape at an insulation supply house and wrap the joint with about 3 layers embedded in fiberglassing resin. It's messy but it seems to work very well; or perhaps I should say it has up to now.

Thats all for this sitting folks. Answers to the quiz next month. Might even try another quiz if you think your ego can stand it.

73 SK EARS DE KB5RR CL

YOUR COMPLETE AMATEUR RADIO STORE

KRYDER ELECTRONICS



ICOM
2 AT
Free!
DRAWING
3 PM
DEC. 13

*Second
Anniversary
Celebration
Saturday, Dec. 13, 1980*

To show my appreciation for your excellent support of my store these two years, I'm giving away this ICOM 2AT to one of my customers. Come on by to help celebrate our anniversary - and get your name in the drawing. It's my way of saying, "Thanks! I really appreciate your business!"

— Chuck
N5SW

Tickets for the drawing available at the store - one per customer, please.

**KEEP THIS STUB
AS A REMINDER**

(You must be present to win!)

*December 13, 1980
3 PM Drawing
for ICOM 2-AT*

**KRYDER ELECTRONICS
NW 50 & MacArthur**

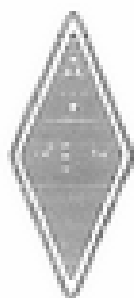
**PLACE THIS TICKET IN THE BOX BEFORE 3 PM DEC. 13
KRYDER ELECTRONICS, MacArthur Square, 5826 NW 50**

NAME _____

CALL (must be licensed) _____

ADDRESS _____

— YOU MUST BE PRESENT TO WIN —



THE AMERICAN RADIO RELAY LEAGUE, INC.

OFFICE OF THE
SECTION COMMUNICATIONS-MANAGER

LEONARD HOLLAR WA5FSN

QST
OFFICIAL ORGAN

Operation 'Sky Warn' does not shut down during the winter. Rather, it is available for the exchange of reports of unusual Weather Conditions, particularly heavy snow and/or icy and slick roads, etc. This is the time for more diligent monitoring, specially during inclement weather.

I regret to say this, BUT: on several of our Repeaters, it is very hard for strangers to get a response to a Call, much less assistance, if needed. From experience: on a long drive, it is both refreshing and awakening to visit awhile with a friendly fellow Amateur, even if only for a few minutes.

By now, the Oklahoma Area Net (3705khz, daily 6:30 P.M.) has probably been closed for lack of interest and participation. If some one wants to try to revive it. I am open to suggestions.

In April 1979 QST a new set of rules for the Public Service Honor Roll was announced. For the past several months, Oklahoma reports have averaged from 3 to 7 per month. I know that We have more Operators reporting Traffic than that, Who qualify for this Honor. Also, it was not mentioned in the above mentioned rules that: 12 straight mentions in the PSHR Column brings another 'Piece of Wall Paper'. How about it??

With this being printed early in December. I want to take this opportunity to wish each and every one of you the 'Best of Season's Greetings and wishes for a Peaceful and Prosperous 1981. Also, to thank each and every one of you for the help and cooperation given by you this past year.

October Net Activity.

Net	Sessions	Check-ins	Traffic	Weather
O.P.E.N.	4	221	4	
O.F.O.N.	23	372	101	
S.T.N.	27	463	111	
O.T.W.N.	27	420	296	258
O.A.N.	30	129	36	
O.L.Z.	31	211	94	
Night Owls	31	588	93	
Q.C.W.A.	4	123	15	
N.W. Service Net	14	161	5	

TOWER FOR SALE, Wilson MT-61B crank-up with 3 element tri-band Cubex quad antenna. \$495.00 for both. Tim Johnson, N5BTE, (918) 367-2386.

FOR SALE: Pair of 2m 11-element Sabre antenna with 10 ft boom. Make offer to Charley Woodworth KA5BDN, Altus 482-4298 or contact via Altus repeater, 19/79.

The Amateur Television Experimental Society is having their Christmas Party this year on December 11, at 7:00 P. M. Come over to the "Red Lobster North" 4243 Northwest Expressway. Hope you and your family will plan to attend. There will be a short business meeting, but lots of good fun and food for everyone. "Dutch Treat"

See individual club sections for times, places & details.

DECEMBER '80 HAM HAPPENINGS						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Edmond Club Dinner 1	Great Plains 2	MORI DINNER, 3 Dorson's	4	ACARC DINNER: 5 American Legion	6
Wheatstrew, Watonga 7	Choctaw DINNER, Olde Germany 8 USAF MARS	7 EARS DINNER Cartmen's; Shawnee; OU; 9 Th-City	10	ATV DINNER, Red Lobster 11 Altus	12	EDIT C+E... SCARS 13 DINNER
14	ARES 15	OCAPA DINNER Heritage 16 House	17	Key County 18	VHF DINNER, 19 GIFTS	OCAPA MAILS C+E 20
EARS 21	22	Shawnee 23	24	Christmas Day 25	26	27
28	29	30	NEW YEAR'S EVE 31			

Can you wear

SOFT CONTACT LENSES?

Find out if you can wear soft contact lenses. Just drop by for a *free computer analysis* using our System 6600 Autorefractor.

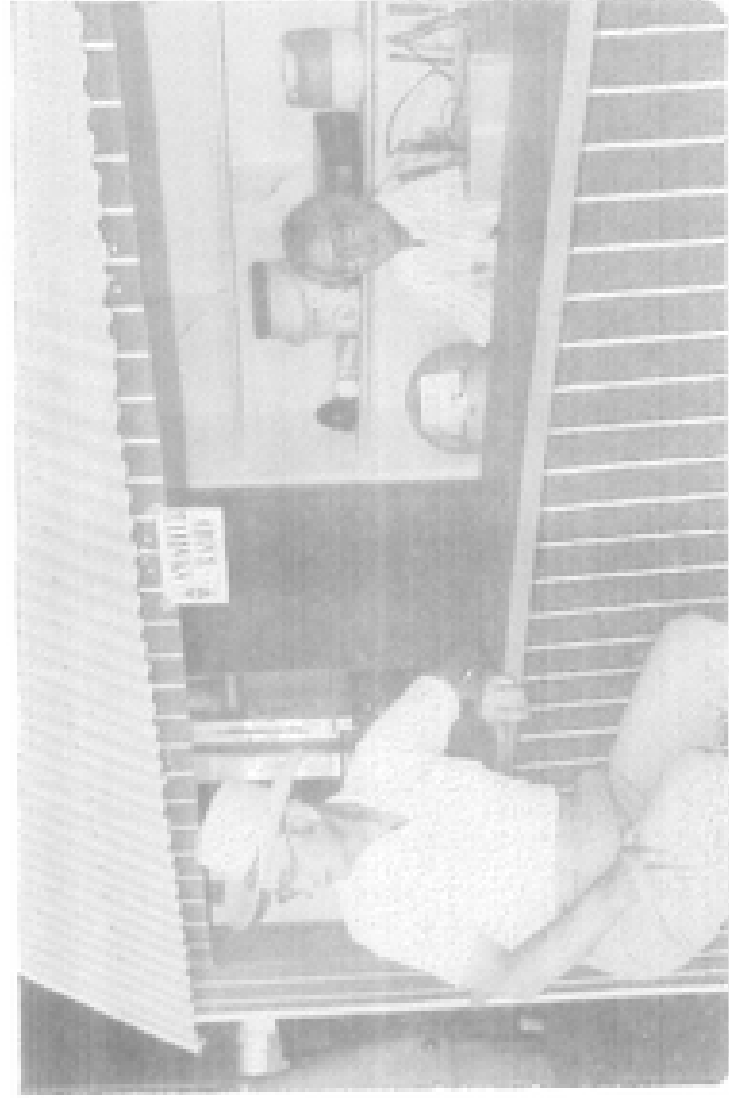
If the signs are right, we'll place soft contact lenses on your eyes and make a further evaluation. Bring your written prescription if you wish. Patient normally gets lenses *IMMEDIATELY!*

840-1234

Dr. Robert Goodhead
Optometrist, Inc.
2821 N.W. 57th St.

NO APPOINTMENT NECESSARY

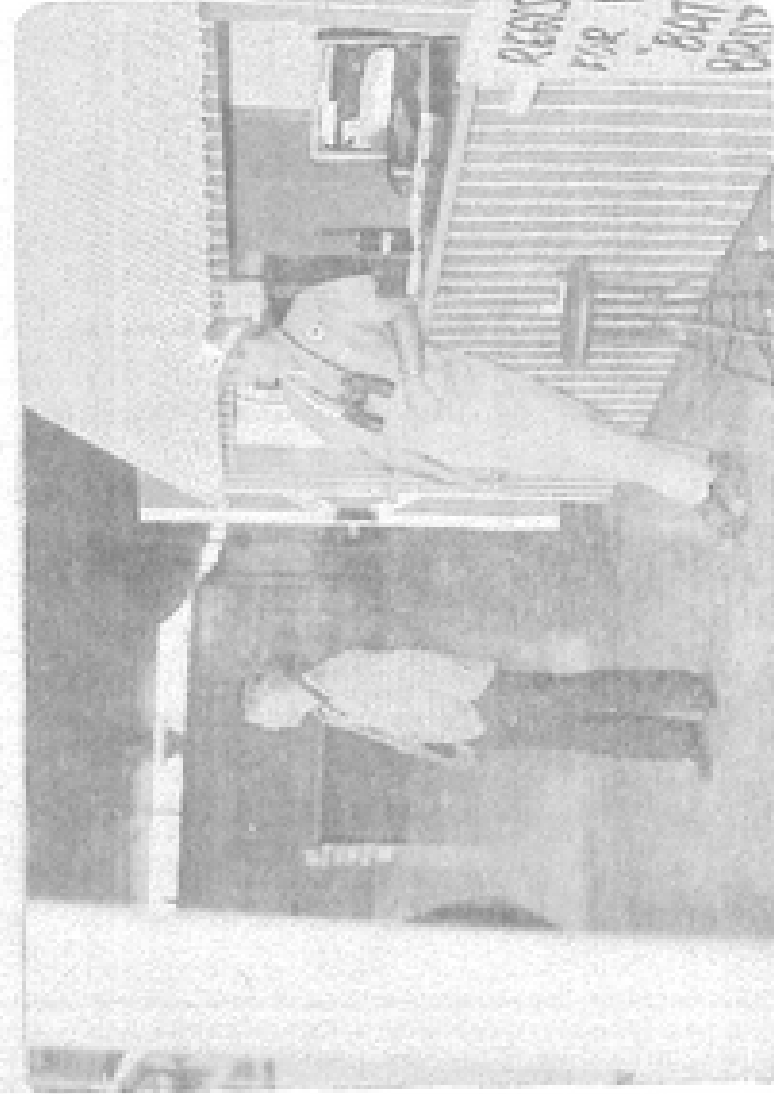
Ask Doc, WA5CZN, about his fantastic contacts!



CO-COORDINATOR DON, WD5ISS WITH SUPER NET
CONTROL DON, K5SJV WAITING FOR CHECK-INS



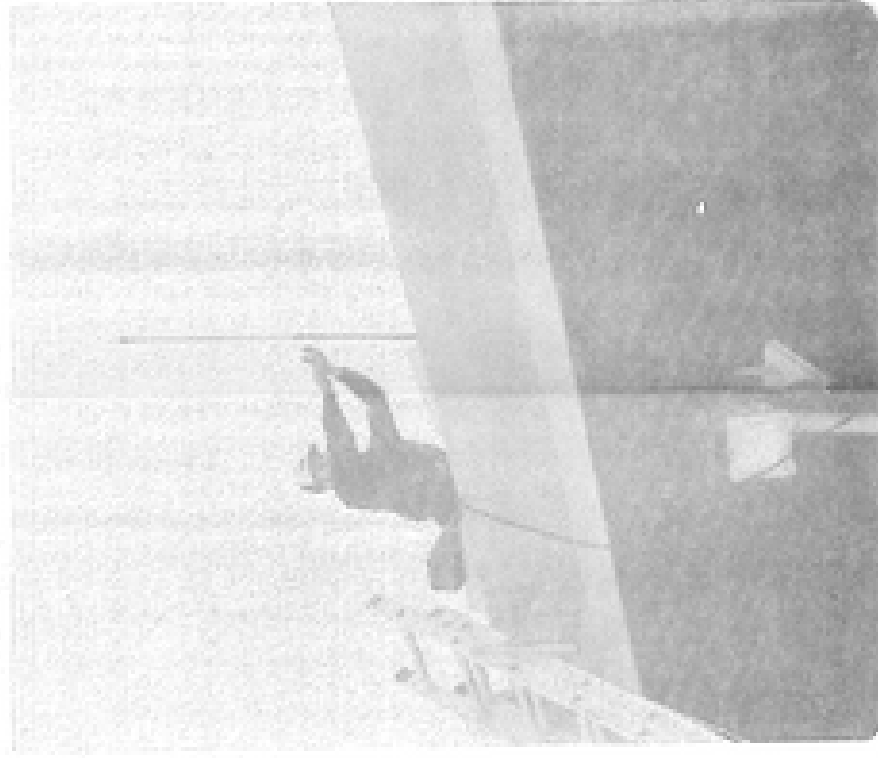
FRED, KA5CXW CHECKING IN WITH COMMAND
POSTEROM A BUSY PARKING LOT.



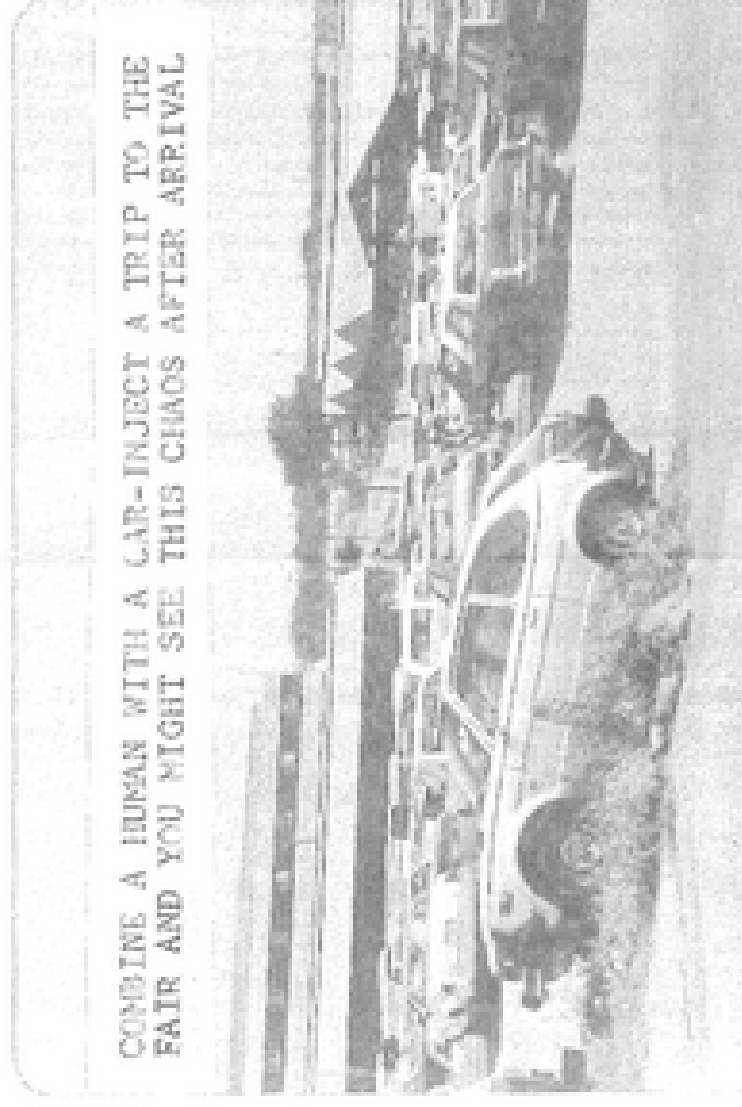
JIM, K5VRL, VHF CLUB PREXY..TALKING IT OVER
WITH THE PROJECT COORDINATOR FRED, KA5CXW



MANY LOYAL PUBLIC SPIRITED HAMS REMEMBER THIS
VIEW AS THEY PERFORMED SURVEILLANCE OF THE BUSY
PARKING LOTS DURING OKLA STATE FAIR 19 THRU 28
SEPTEMBER AS A PUBLIC SERVICE PROJECT FOR CORA.



FANTASTIC!!! THE ANTENNA BY CY, WB5TKG WAS
SUPER MOUNTED ATOP THE CANOPY OF 89'RS PARK



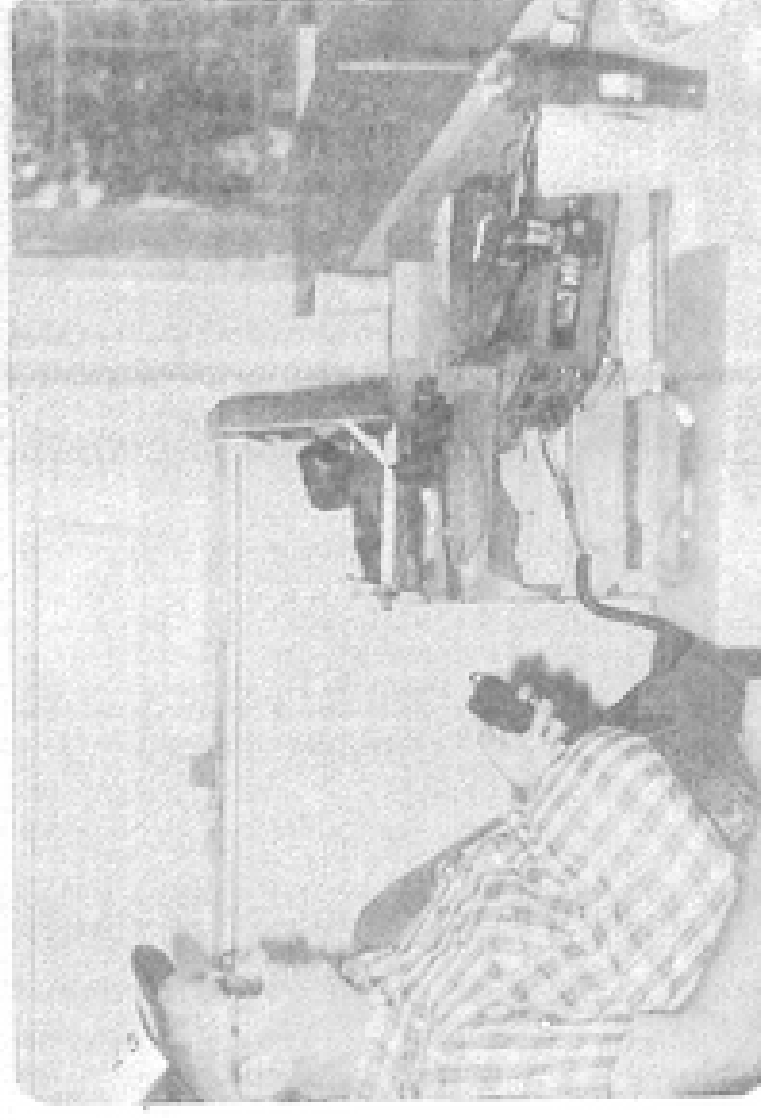
COMBINE A HUMAN WITH A CAR-INJECT A TRIP TO THE
FAIR AND YOU MIGHT SEE THIS CHAOS AFTER ARRIVAL



MARTIN, WB5AGZ PROVED THAT A BLIND AMATEUR CAN
STACK UP WITH THE BEST AS NET CONTROL' THANKS!!!



JIM, N5BEQ AND DON, K5SJV COMBINED TIME AT THE
CORA FAIR PROJECT WAS OVER 70 HOURS.. WHEW!!!!



EL SUPREMO CHUCK, K5NK PRESIDENT OF CORA SPENT
OVER 8 HOURS AT THE PROJECT GRE E A T T !!!